# First Semester BE Degree Examination (CBSC Scheme)

Time: 3 Hours



Max Marks: 100 marks

Sub: Basic Electrical Engineering

Q P Code: 60004

Instructions: 1. Answer five full questions.

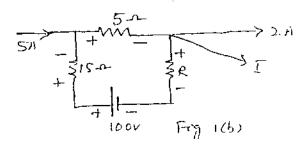
- 2. Choose one full question from each module
- 3. Your answer should be specific to the questions asked.
- 4. Write the same question numbers as they appear in this question paper.
- 5. Write Legibly

#### Module-1

a State and explain Ohms and mention any two limitations

6 Marks

b A portion of the network is shown in Fig 1(b) with the polarities as indicated. The voltage 8 Marks across the  $15\Omega$  resistor if 30V. find the value of resistance R and the current 1.



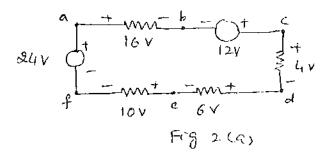
c Define RMS value of an alternating quantity and derive the expression for the same.

6 Marks

OR

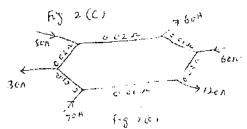
2 a In the network shown in Fig2(a), find the Voltages Vac, Vec, Vac and Vad

6 Marks



b Determine the current in all branches of the network shown in Fig2(c).

8 Marks



c Define average value of an AC quantity and derive the expression for the same.

6 Marks

#### Module-2

3 With circuit diagram and wave forms show that the average power is zero in pure 6 Marks resistance. With circuit diagram and Phasor diagram derive the expression for Line Voltage and 8 Marks Current for a Star connected balanced load. 6 Marks A balanced Star connected load of  $(8 + j6) \Omega$  phase is connected to a 3-phase, 230V supply. Find the line current, powerfactor, active power and reactive power. OR 4 Show that the average power demand is never zero in case of series RL circuit with. 6 Marks relevant circuit and waveforms. Show that two wattmeters are sufficient to measure 3-phase power with relevant circuit 8 Marks and phasor diagram. Three similar coils are connected in star takes a total power of 1.5kw at a p.f of 0.2 6 Marks lagging from a 3-9, 00v, 50Hz supply. Determine the parameters of the circuit. 5 Explain the constructional features of various types of transformers. 8 Marks A 400[230v, 50Hz single phase transformer is provided with 500 turns on LV side. 4 Marks Calculate (I) No. of turns on the HV side (II)Effective area of cross section of the core of the flux density to be less than  $1.4 \text{wb/m}^2$ 8 Mark What do you mean by Electric Shock? With neat diagram, explain the pipe earthing? OR 6 Derive the condition for maximum efficiency for a transform 6 Marks A single phase 20KVA transformer has 1000 primary and 2500 secondary turns. The net 6 Marks cross sectional area in 100 cm<sup>2</sup>. When the primary winding is connected to 500V, 50Hz supply. Calculate the following (1) The maximum value of flux density (II)The secondary induced voltage (III)Primary and secondary full load currents With circuit diagram and truth table. Explain the operation of three way control of lamps 8 Marks

		Module-4 CENTRAL CO	
7.	а	Derive the EMF equation of a DC generators	6 Marks
	b	Explain the various characteristics of a DC shunt motor	8 Marks
	С	A 4 pole DC Shunt motor tales22.5A from a 250V supply. The armature resistance is	6 Marks
		$0.5\Omega$ and shunt field resistance in $125\Omega$ . The armsture is wave wound with 300	
		conductors. If the flux/pole is 0.02wbs. Calculate (I) Speed (II) Torque developed and (III) power developed.	
		OR	
8	a	What is a dc generator? What is the basic principle on which it is working? Give the classification of DC generators.	6 Marks
	b	Explain the various characteristics of series motor with relevant diagrams.	8 Marks
	c	A series motor runs at 600rpm when taking a current of 110A from a 230V supply. Given	6 Marks
		that $R_a$ =012 $\Omega$ , $R_{se}$ = 0.03 $\Omega$ , the useful flux/pole for 110A is 0.024wb and that for 50A is	
,		0.0144wbs. Calculate the speed when the current has fallen to 50A	
(	ž.	Module-5	
9	a	Explain the constructional features of various types of synchronous generators.	8 Marks
	b	What is an IM? Explain the principle of operation	6 Marks
	c	A 3 phase IM is wound for 8 poles if the full load slip is 2.5%. Calculate	6 Marks
		(I) Synchronous speed	
		(II) Slip Speed	
		(III) Rotor speed	
		(IV) Rotor frequency	
		OR	
10	а	With usual notations, derive an expression for the induced voltage for a synchronous	6 Marks
		generator	

An 8 pole alternator runs at 750 rpm and supplies power to a 6 pole IM which has a full

load slip of 3%, Find the full load speed of the motor and frequency of rotor emf.

What is a slip? Explain its significance

b

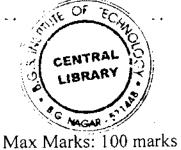
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6 Marks

8 Marks

## First Semester BE Degree Examination (CBSC Scheme)

Time: 3 Hours



### SUB: ELEMENTS OF MECHANICAL ENGINEERING

Q P Code: 60010

		QT Code: 00010			
Inst	ruc	tions: 1. Answer five full questions.  2. Choose one full question from each module  3. Your answer should be specific to the questions asked.  4. Write the same question numbers as they appear in this question paper.  5. Write Legibly			
		MODULE-1			
1.	<b>-</b> -y	Explain: (i) Hydroelectric Power Plant	10 marks		
. (	'	(ii) Wind Power Plant.			
	б	List the Boiler Mountings and Accessories. Explain any four.	10 marks		
	υ				
2		OR (1997) What are turbines? Explain Kaplan turbine with near sketches.	12 marks		
2	a	$\sim 10^{-3}$	08 marks		
	b	Differentiate between Open and Closed cycle Gas Turbines.	oo marks		
~		MODULE-2	10 marks		
3	a	With PV diagram explain Otto cycle and Diesel Cycle			
	b	Following data were collected from a 4-stroke single cylinder oil	10 marks		
		engine at full load. Bore=200mm, stroke = 280mm, speed = 300rpm, indicated mean			
(	-	effective pressure = 5.6 bar, torque on the brake drum=250 Nm, oil consumed= 4.2 kg/hr			
		and calorific value of oil = 41 MJ/kg. Determine mechanical efficiency, indicated thermal			
		efficiency and brake thermal efficiency.			
		OR			
4	a	With a neat sketch explain the working of Vapour Absorption Refrigeration system	10 marks		
	b	Draw neat sketch and explain the working of Domestic Air Conditioner	10 marks		
		MODULE-3			
5	a	With neat sketches explain (i) Facing	10 marks		

(ii) Thread cutting

(iv) Counter Sinking

(iii) Reaming

(v) Boring.

	b	With neat sketches explain working Operations of (i) Surface Grinding (ii) Centerless Grinding	10 marks
		OR	
6	a	With a neat sketch explain Electric Arc Welding	10 marks
	b	Differentiate between Soldering and Welding	10 marks
	Ü		
		MODULE-4	•
7	a	Define (i) Velocity ratio	04 marks
		(ii) Creep	
		(iii) Slip	
		(iv) Lubrication	
	b	Explain Idler and Stepped Cone drive mechanisms.	12 marks
	С	Two mating gears have 30 and 45 involute teeth of module 12 mm and 200 pressure	04 marks
		angle. Determine velocity ratio and centre distance between gears.	
		OR	
8	a	Explain Ball bearings and Roller bearings with neat sketches	12 marks
	b	Discuss any four properties of a good lubricant.	08 marks
		MODULE-5	
9	a	What are engineering materials? Classify and explain each.	06 marks
	b	Write a short note on (i) Cast fron (ii) Steel	08 marks
	с	Explain any three properties of polymeric materials	06 marks
		OR	
10	а	What are Matrix and Reinforcements? Explain the classification of Composite	08 marks
	h	Explain the applications of Composites in Aircraft and automobile industries.	12 marks
	b	Explain the applications of Composites in Antifact and adjoind one industries.	, Z man

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## First Semester BE Degree Examination (CBSC Scheme)

Time: 3 Hours

Max Marks: 100 marks

### SUB: CIVIL ENGINEERING AND MECHANICS

**Q P Code:** 60005

Instructions: 1. Answer five full questions.

- 2. Choose one full question from each module
- 3. Your answer should be specific to the questions asked.
- 4. Write the same question numbers as they appear in this question paper.
- 5. Write Legibly

### **MODULE-1**

- 1 a With neat sketch explain different types of dams.

  b Explain the role of Civil Engineer in Infrastructure development of the country

  OR

  2 a Explain briefly any two scopes of Civil Engineering.

  b Explain the Effect of Infrastructure on Socio-economic development a country

  MODULE-2

  3 a Explain the basic idealization of Civil Engineering

  10 Marks

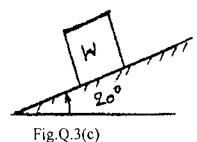
  MODULE-2

  5 Marks
- b State and prove Varignon's Theorem

  c A block weighing 10kN is resting on an inclined plane as shown in Fig.Q.3(c).

  Determine its components normal to and parallel to the inclined plane.

  The plane makes an angle 20° with the horizontal.



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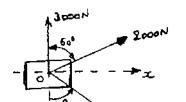
4 a State Law of Transmissibility of Forces, Law of superposition and Law of physical 6 Marks independence

b Define Force and its characteristics 4 Marks

A Marks

OR

c A body is subjected to the three forces as shown in Fig.Q.4(c). Determine the direction of 10 Marks the force F so that the resultant is in 'x' direction, when i) F=5000N ii) F=3000N.



### **MODULE-3**

5 a Mention the equations of Equilibrium required for Coplanar concurrent and Coplanar non-concurrent system of forces

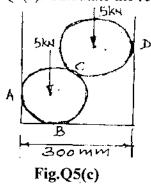
4 Mark

b State and Prove Lami's theorem

6 Marks

c Two spheres of radius 100mm and weight 5kN is in rectangular box as shown in Fig.Q5(c). Calculate the reactions at the point of contacts.

10 Mark



OR

6 a With neat sketch explain different types of Beams.

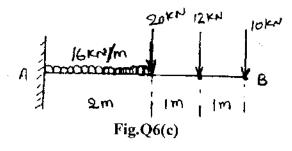
6 Marks

b What are statically determinate and indeterminate beams

4 Marks

c Determine the reactions for a cantilever beam fixed at 'A' and free at 'B' loaded shown in Fig.Q6(c).

10 Marks



### **MODULE-4**

7 a Derive the centroid of a Semicircle by the method of Integration.

8 Marks

b Locate the centroid of the plane shown in Fig.Q7(b)

12 Marks

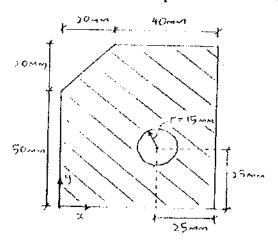
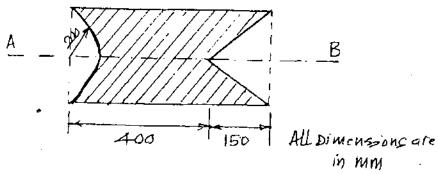


Fig.Q.7(b)

a Determine radius of gyration of shaded area shown in Fig.Q8(a) about the axis AB.



b State and prove Parallel axis theorem.

8 Marks

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### **MODULE-5**

9 a Derive an expression for Greatest height reached by a particle and the time it takes

8 Marks

b A stone is dropped from the top of a tower 50m high. At the same time another stone is thrown up from the ground with a velocity of 25m/s. At what distance from the top and after how much time the two stones cross each other?

12 Marks

### OR

10 a What is super elevation? Mention its advantages and disadvantages.

8 Marks

b A cricket Ball is thrown from a height of 1.8m above the ground level at angle 30° with the horizontal with a velocity 12m/s and is caught by the fielder at a height of 0.6m above the ground. Determine the distance between the two players.

12 Marks

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### First Semester BE Degree Examination (CBSC Scheme)

Time: 3 Hours



Max Marks: 100 marks

SUB: ENGINEERING PHYSICS

Q P Code: 60003

Instructions: 1. Answer five full questions.

- 2. Choose one full question from each module

acting all over the surface. Determine the change in its volume.

	•	3. Your answer should be specific to the questions asked. 4. write the same question numbers as they appear in this question paper. 5. Write Legibly	
		MODULE – 1	
1	/a.	Define damped oscillations and forced oscillations with examples	4 marks
سد. ا	¥ /	Describe the construction and working of Reddy Shock tube.	6 marks
_		Define simple harmonic motion. Derive the equation for simple harmonic motion	6 marks
	7	using Hooke's law.	
	d.	Evaluate the resonance frequency of a spring of force constant 2467 N/m, carrying	4 marks
	u.	a mass of 100 gm.	
		ØR***	
2.	а.	Define Mach number. Write the applications of shock waves.	6 marks
۷,	b.	Discuss the theory of forced vibrations and hence obtain the expression for	10 marks
	٠.	amplitude.	
	c.	Find the frequency of oscillation of a free particle executing simple harmonic	4 marks
	C.	motion of amplitude 0.35 maif the maximum velocity it can attain is 220 m/s.	
		model of ampires of the same o	
		MODULE – 2	
3		Define young's modulus, bulk modulus and rigidity modulus and derive a relation	8 marks
$C^{\tilde{i}}$		between them!"",	
	b.	Define bending moment of a beam. Derive an expression for bending moment	8 marks
		$(B.M. = (\frac{r}{r}) lg)$	
			4 marks
	C.	A wire length 1 m and diameter 1 mm is clamped at one of its ends. Calculate the	4 11101113
	7	Couple required to twist the other end by 90°. Given rigidity modulus = $2.8 \times 10^{10} \text{ N/m}^2$ .	
	1/4	OR	10 marks
4	A Tun <b>a</b>	State Hooke's law of elasticity. Derive an expression for young's modulus Y of a	20 1110111
	Ŷ,	material of a single cantilever.	6 marks
	b.	What are torsional oscillations? Mention the expression for couple per unit twist of	0 11101113
		a solid cylinder and expression for period of oscillation.	4 marks
	C.	A solid lead sphere of radius 10.3 m is subjected to a normal pressure of 10 N/m <sup>2</sup>	7 11101113
		II I	

### MODULE - 3

		MODULE – 3	
5.	a. b.	Define lattice and basis. Explain seven crystal systems with neat diagram.  Discuss different types of optical fibers with suitable diagrams.	10 marks 6 marks
	c.	A monochromatic X-ray beam of wavelength 0.7 Å undergoes first order Bragg reflection from the plane (302) of cubic crystal at a glancing angle of 35. Calculate the lattice constant	4 marks
	,	OR	
6.	/a.	Derive an expression for numerical aperture in terms of refractive index of core and	6 marks
		cladding.	100
	/b.	Derive Bragg's law.	4.marks
	بحر.	Derive an expression for interplanar spacing of a crystal in terms of miller indices	6 marks
	d.	Calculate the V-number and number of modes supported by an optical fiber of core index 1.54 and cladding index 1.5 at operating wavelength 1.3 $\mu$ m. The diameter of the fiber is 50 $\mu$ m.	4 marks
		MODULE – 4	
7.	a.	Set up 1-dimensional time independent Schrodinger's wave equation and mention any two properties of wave function.	8 marks
	b.	Derive an expression for energy density at thermal equilibrium through Einstein's coefficients.	8 marks
	c.	An electron has a speed of 500 m/s correct up to 0.01 %. With what fundamental	4 marks
		accuracy the position of the electron can be located?	· marks
8.	a.	Show that the electron cannot exist inside the nucleus using Heisenberg's uncertainity principle.	6 marks
1	b.	What is a laser? Describe the construction and working of CO <sub>2</sub> laser with the help of energy level diagram.	10 marks
	C.	A pulsed laser emits of pulses of 20 ns duration with an average power / pulse being 0.1 Mw. If the number of photons emitted per pulse is 6.981 x 10 <sup>15</sup> , calculate	4 marks
		the wavelength of the laser.	
		MODULE – 5	
9.	a.	Define Fermi level and Fermi factor. Write the assumptions of quantum free	6 marks
		electron theory.	
	b.	Derive an expression for conductivity of semiconductors.	6 marks
	C. grien	What are polar and non polar dielectrics?	4 marks
.111.	d:	The Fermi level in silver is 5.5 eV at 0°K. Calculate the number of	4 marks
	of Hilling	free electrons / unit volume.	
10		OR OLGANIZATION OR THE PROPERTY OF THE PROPERT	
10.	a. L	Obtain an expression for Fermi energy at 0° K.	6 marks
	b.	Derive Clausius-Mossotti equation.	6 marks
	C.	Discuss solid, liquid and gaseous dielectrics with examples.	4 marks
	d.	The following data are given for intrinsic germanium at 300 K. The electron and	4 marks
		hole mobilities are 0.85 m <sup>2</sup> V <sup>-1</sup> s <sup>-1</sup> and 0.04 m <sup>2</sup> V <sup>-1</sup> s <sup>-1</sup> . Find the resistivity of the	
		sample if the intrinsic carrier concentration is $7 \times 10^{12} \mathrm{m}^{-3}$ .	

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## First Semester BE Degree Examination (CBSC Scheme)

Time: 3 Hours

Max Marks: 100 marks

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**SUB: ENGLISH - 1** 

Q P Code: 60001

Instructions: 1. Your answer should be specific to the questions asked.

2. write the same question numbers as they appear in this question paper.

3. Write Legibly

### Question Paper Version - B

### Answer all the questions

1. How many of the following numbers are divisible by 3 but not by 9?

2133, 2343, 3474, 4131, 5286, 5340, 6336, 7347, 8115, 9276

- a. 5
- h. *6*
- c. 7
- d. None of these

2133

- 2. The difference between the place value and the face value of 6 in the numeral 856973 is
  - a. 973
- ь. 5994
- c. 5973
- 3. The smallest 6-digit number exactly divisible by 11 list
  - a. 111111
- Ь. 11077
- c. 1000711
- d. 2233109
- 4. The largest 5-digit number exactly divisible by 91 is
  - a. 88899
- ь. 99918
- c. 45361
- d. 98978

- 5. What is the unit digit in (4137) 54
  - a. l
- b. 3
- c. 7
- d. 9

Read the following passages and answer the questions given below (Q6-15)

#### The Greening of the aged

- 1. A visited most homes for the aged is so depressing that second visits are uncommon. The men and women we see there are listless, unresponsive, and often incapable of performing simple tasks. They appear unmotivated, uninterested, and turned away from others. Their debilitated physical and emotional condition is not a necessary consequence of old age. Rather, it is the inevitable result of being treated like a passive object in an institutional setting.
- 2. Recently, two young researchers from Yale University, Ellen Langer and Judith Rodin, decided to see whether they could reverse the debilitated condition of residents in one of these old-age homes (1976). Their sample consisted of 91 residents, aged 65 to 90, all well enough to be walking about. The investigators reasoned that the crucial psychological process missing in such institutions was taking responsibility for one's own decisions. To be an actor in life's drama, we must act, decide, and be responsible for the consequences. To let others decide for us is to lose the main ingredient in self-esteem and competence.

6. How are the residents of c	ld age homes des	cribed in para	graph (?		
a. Healthy	b. Sad	c. Uncom	mon	d. Weak, poor and	d troubled
7. According to the author, w	hat is the reason	for their poor	condition?		
a. Left out feel	b. Unintereste	ed c. I	III treated li	ke a passive object	d. None of these
8. (Par. 2) What was the rese	archers' hypothes				
a. Improving self este		b. Taking ro			
c. Less competence		d. Change t	he conditio	n of the poor	
9. (Par. 2) What is the main in	igredient in self-e	steem and cor	ifidence?		•
a. Act and decide	b. Decision r			ilitated condition	None of these
among a box of them of patients was given the residents. They w  4. The results of the enhality behavioural measures the comparison group well-being.	nproving the qual as a present – but instructions that ere handed a plan anced sense of pe to, the experimental	ity of life in the they were tolestressed the rest as a present ersonal responding group ("I'll it for you") of	or them to the home. The did they had esponsibility and information asibility we do it inysel a alertness,	take more responsively were them asked a to eare for it, in control of the staff to proved that the nurses were dramatic. On questions as the staff to prove the dramatic.	to choose a plant from rast, the second group ride good services for buld water it for them.
10. (Par. 4) How did the resear	chers measure the	results of the	study?		
a. Questionnaire rating		•	b. Behav	vioural measures	
c. Questionnaire rating		measures	d. None	of these	
11. Which group improved mor	e?				
a. Experimental	b. Comparison	c. Bot	th c	l. None of these	
12. In what areas did the better	group show impro	ovement?			
a. Alenness	b. Active particip			of well being	d. All of these
5. Eighteen months later, thappiness, sociability, a the residents to be resprate for the entire nursi Following the experiments as many for the no-response.	consible for thems onsible for thems ong home during a cont, only 15 percel consibility group.	selves and the n eighteen-mo nt of the perso	ir plants manth period nally respon	ip. But most startling ade them live longer prior to the experim nsible residents died.	of all, encouraging ! the overall death ent was 25 percent., compared to twice
<ol><li>In conclusion, psycholo affect the very process</li></ol>	gical intervention of life and death it	s of this kind i	not only im	prove mood and atti	tudes; they seem to
13. (Par. 5) How were results 18	months later?				

a. Results perished

b. No change

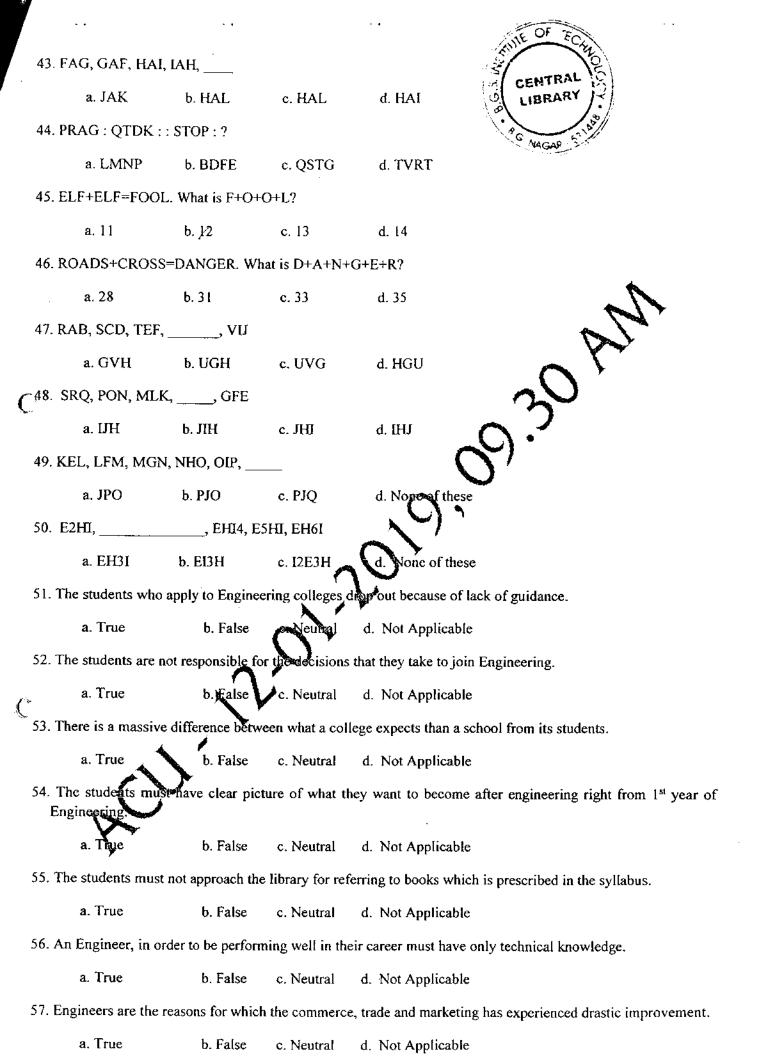
c. Results remained

d. None of these

·		<i>-</i> ₹/ a	ENTRAL (5)
14. What was the most surprising finding of the s	study?		JBRARY
a. None changed	b. Residents bec	. 6	Magar S'INO
c. Their plants made them live longer	d. None of these	•	
15. Choose the correct conclusion from the optio	ns given below.		
a. Residents can be changed	b. Psychological interve	ntions help resident	ts
c. People will not die	d. None of these		
16. When we read only to find the answer, this to	echnique is called.		
a. Skimming b. Scanning	c. Churning	d. Wringir	ıg M
17. When we read by skipping through sections	of a passage, this techniq	jue is called.	
a. Skimming b. Scanning	c. Churning	d. Waingir	ıg
(18. When we read only the headings to identify	the answer, this techniqu	e is called	
a. Skimming b. Scanning	c. Churning	d Wringin	ng
19. Which technique helps you to read up to 100	00 words a minute?	$\mathbf{Z}'$	
a. Skimming b. Scanning	c. Churning	d. Wringi	ng
20. Which technique is very useful to identify w	hich section of a passage	e is to be read?	
a. Skimming b. Scanning	c. Churning	d. Wringi	ng
21. In the 5 stages of listening process which sta	nge is "temembering"?		
a. Stage 1 b. Stage 2	c. Stage 3	d. Stage 4	<b>,</b>
22. In the 5 stages of listening process which sta	age is 'receiving'?		
a. Stage 1 b. Stage 2	c. Stage 3	d. Stage 4	ŀ
23. In the 5 stages of listening process which st	age is 'understanding'?		
a. Stage 1 b. Stage 2	c. Stage 3	d. Stage 5	5
24. In the 5 stages of listening process which st	age is 'evaluating'?		
a. Stage 4 b. Stage 1	c. Stage 3	d. Stage :	5
25. In the 5 stages of listening process which st	age is 'responding'?		
a. Stage 4 b. Stage 1	c. Stage 3	d. Stage	5
26. What is the barrier of listening called if a p	erson has hearing proble	ms?	
a. Egotism b. Rapid thoughts	c. Impaired hearing	d. None of these	
27. What is the barrier of listening called if a p words?	erson's mind wanders or	nto topics which are	not related to speaker's

28. What is the barrier	of listening call	ed if a person is g	given a lot of in	formation to receive?	
a. Egotism	b. Rapid thou		rloaded messag		nese
29. What is the barrier	of listening call	ed if a person car	not understand	the accent spoken by the	he speaker?
				d. None of these	
				merely a passive activi	ty?
		Itural differences		d. None of these	4
31. P5QR, P4QS, P3C					A.
a. 2PQW		c. P2QU	d. PQ3U	7	
32. QPO, NML, KJI,	, EDC				•
a. HGF		c. JKL	d. GHI	20	
33.SCD, TEF, UGH,	, WKL			-O.	
a. CMN	b. UJI	c. VIJ	d. IJT	<b>Q</b> '	
34. ELFA, GLHA, II	JA,, ML	NA	0	•	
	ь. KLMA		d. KLLA	•	
35. In a certain code,	SIKKIM is writ			NG written in that code	
а. SQBHOH	OF b. U	<b>ОВНОГО</b> Б	c. UQBHOE	OI d. UQBHO	HOF
36. if COMPLETED	is coded as MO	CELPDET then I	DIRECTION w	ill be coded as:	
a. RIDTCEN	1ОЈ b. SI	DTCENOI	c. RIDTCEN	OI d. RIETCE	NOI
37. EAT+THAT=AI	PPLE. What is A	LAT?	•	9×33×	
a. 13	b. 10	c. 11	d. 9	NOI d. RIETCE	
38. SEND+MORE=	MONEY. What	is M+O+N+E+Y	?	2×	
a. 11	b. 12	c. 13	d. 14		
39. BASE BALL=	GAMES. What is	G+A+M+E+S?			
a. 21	b. 23	c. 25	d. 29		
40. LETS+WAVE=	LATER. What is	s L+A+T+E+R?			
a.12	b. 13	c. 14	d. 15		
41.DONALD+GER	RALD=ROBERT	. What is R+O+E	3+E+R+T?		
a. 22	b. 24	c. 26	d. 2		

42. SCD, TEF, UGH, \_\_\_, WKL



58. In order to be an	n effective Engine	eer, one must pa	y closer and keen	attention to minutest details.
a. True			d. Not Applica	
59. Engineers do no	t require leadersh	nip as well as ma	anagement skills.	
a. True	b. False	c. Neutral	d. Not Applica	able
60. Engineers know	the value of time	<b>&gt;.</b>		
a. True	b. False	c. Neutral	d. Not Applica	ble
61 mom is	on the phone.			
a. You	b. Your	c. You're	d. Yours	
62 looking	a lot better than	you did.		
a. You	b. Your	c. You're	d. Yours	
63. If in tov	vn, come by and	see us.		$\sim$ $O_{\sim}$
a. you	b. your	c. you're	d. yours	$\sim$ 3
64. If you do it again	certain	to get sent to the	e office.	<b>(4)</b>
a. you	b. your	c. you're	d. yours	$\mathbf{O}$
65. Was it b	rother I saw last	week?	$(\sim)$ .	1
a. you	b. your	c. you're	d. yours	
66. I hope that	happy in your	new job.		
a. you	b. your	esyou re	d. yours	
67. I hope you get lots	s of presents on _	birthday	/.	
a. you	b. your	c. you're	d. yours	
68 not going	g out looking like	that.		
a. You	b. Your	c. You're	d. Yours	
69. I'm coming over to	house	to sort this out.		
a. you	b. your	c. you're	d. yours	
70. Do you know whe	re going	g?		
a. you	b. your	c. you're	d. yours	
71. The applause show	ed how deeply th	ne presentation h	ad	_ the audience.
a. affect		c. affected	d. effected	
72. His attitude was		_ by his upbring	ging.	
a. affect	b. effect	c. affected	d. effected	

7	٠,			• •	30
7.	3. No matter what he	e does, it will ha	ve no	on me.	State Sch
	a. affect	b. effect	c. affected	d. effected	CENTRAL (
7	4. No matter what he	does, it will no	ot	me.	900
	a. affect	b. effect	c. affected	d. effected	MGAP 3
7:	5. How was the team	ı	by the loss o	f their coach?	
	a. affect	b. effect	c. affected	d. effected	
70	6. What is the type o	f introduction c	alled, when it is re	equired to introduce ye	ourself in quick time fra
	a. Self-introd	uction b. G	roup introduction	c. Elevator introduc	tion d. None of
7	7. Choose the best o	ption which suit	s the best for prof	fessional introduction.	
	a. Dress appro	opriately	b. Keep eye co	ontact c. Be confid	dent d. All of th
C.78	8. A non – formally	prepared speech	is called.		30
<b>V</b> -	a. Extempore	speaking	b. Presentation	c. Debate	d. None of these
75	9. Which of these ele	ement is not inve	olved in the proce	ess of communications	
	a. Pipe	b. Sender	c. Message	d. Channel	
80	0. Which of these is	the third elemen	nt of communicati	on?	
	a. Sender	b. Receiver	c. Channel	d. Message	
8	1. Which of these is	the most import	ant tool of comm	unication?	
	a. Body langu	age b. Ge	esturos. C. Lan	guage d. Posture	
82	2. Which of these m	ust be avoided in	n any presentation	1?	
C.	a. Proper gran	nmar b. C	mplex words	c. Short sentences	d. Clear voice
<b>C</b> 8:	3. Which of these is	not important in	an oral presentat	ion?	
	a. Words	b. Body lang	uage	c. Gestures	d. Audience size
84	4. Which of these is	the best way to	establish a proper	rapport with audience	»?
	a. Rolliting für	iger b. M	laking eye contac	t c. Waving hands	d. Standing erect
8:	5. In an oral presenta	ition, the speake	er should not		
	a. Panic	b. Pause	c. Making eye	contact d. fa	nspire
86	6. Which number an	ong the followi	ng is divisible by	7?	
	a.77754	b. 7666	c. 77784	d. 5643	
8	7. Which number an	ong the followi	ng is divisible by	8?	
	a. 762928	b. 220953	c. 19537455	d. None of these	·

88.	Which number an	nong the following	g is divisible b	y both 7 and 11?
	a. 4540074	b. 293076	c. 1793498	d. 5740702
89. V	Which of the follo	wing number is di	visible by 63?	
	a. 492815	b. 4107872	c. 5893407	d. 6221628
90. V	Which number is a	livisible by 18?		
	a. 52794	b. 432181	c. 1725516	d. None of these
91. V	Vhat is the unit di	git in the product (	365 x 659 x 7	71)?
	a.1	b. 2	c. 4	d. 6
92. V	What is the unit di	git in 7105?		
	a. 1	b. 5	c. 7	d. 9
93. H	low many 3-digit	numbers are comp	letely divisibl	e 6?
	a. 140	b. 150	c. 151	d. 166
94. (	112 + 122 + 132 +	+ 202) = ?		0,
	a. 398	b. 2485	c. 4232	d.1563
95. W	/hat is the unit dig	git in (795 - 358)?		105
	a. 0	b. 4	c. 6	d.) 25.8
96. W	/hat will be remai	nder when 17200	is divided by I	8 <sup>4</sup> P
	a. 17	b. 16	Te 1	d. 2
97. W	Then a number is one of the number is one of the number is the number is the number is the number is of the	divided by 13, the mber?	remainder is 1	1. When the same number is divided by 17, then remainder
	a. 339	b. 349	c. 369	d. none of these
98. In th	a division sum the dividend?	he divisor is 10 tin	nes the quotier	nt and 5 times the remainder. If the remainder is 46, what is
	a. 4236	b. 4036	c. 4336	d. 5336
99. Or re	n dividing a numb mainder?	per by 357, we get	39 as remaind	er. On dividing the same number 17, what will be the
	a. 0	b. 3	c. 5	d. 11
100. C di	On dividing a num vided by 5?	iber by 5, we get 3	as remainder.	What will the remainder when the square of the number is
	a. 0	b. l	c. 2	.d, 4

## First Semester BE Degree Examination (CBSC Scheme)

(CBSC Scheme)
Time: 3 Hours

Max Marks: 100 marks

SUB: ENGLISH - 1

Q P Code: 60001

Instructions: 1. Your answer should be specific to the questions asked.

2. write the same question numbers as they appear in this question paper.

3. Write Legibly

### Question Paper Version - C

### Answer all the questions

1. The students who apply to Engineering colleges drop out because of lack of guidalce.

- a. True
- b. False
- c. Neutral
- d. Not Applicable

2. The students are not responsible for the decisions that they take to joint in the property of the students are not responsible for the decisions that they take to joint in the students are not responsible for the decisions that they take to joint in the students are not responsible for the decisions that they take to joint in the students are not responsible for the decisions that they take to joint in the students are not responsible for the decisions that they take to joint in the students are not responsible for the decisions that they take to joint in the students are not responsible for the decisions that they take to joint in the students are not responsible for the decisions that they take to joint in the students are not responsible for the decisions are not responsible for the decision are not re

- a. True
- b. False
- c. Neutral
- d. Not Applicable

3. There is a massive difference between what a college expects than a school from its students.

- a. True
- b. False
- c. Neutral
- d. Not Applicable

4. The students must have clear picture of what they want to become after engineering right from 1st year of Engineering.

- a. True
- b. False
- c. Neutral
- d. Not Applicable

5. The students must not approach the library for referring to books which is prescribed in the syllabus.

- a. True
- b. False
- c. Neutral
- d. Not Applicable

& δ. An Engineer, in order to be performing well in their career must have only technical knowledge.

- a. True
- b. False
- c. Neutral
- d. Not Applicable

7. Engineers are the reasons for which the commerce, trade and marketing has experienced drastic improvement.

- a Turke
- b. False
- c. Neutral
- d. Not Applicable

8. In order to be an effective Engineer, one must pay closer and keen attention to minutest details.

- a. True
- b. False
- c. Neutral
- d. Not Applicable

9. Engineers do not require leadership as well as management skills.

- a. True
- b. False
- c. Neutral
- d. Not Applicable

10. Engineers know the value of time.

- a. True
- b. False
- c. Neutral
- d. Not Applicable

11 mom is c	on the phone.				
a. You	b. Your	c. You're	d. Yours		
12looking a	lot better than y	∕ou did.			
a. You	b. Your	c. You're	d. Yours		
13. If in town	n, come by and s	see us.			
a. you	b. your	c. you're	d. yours		
14. If you do it again _	certain	to get sent to the	e office.		٨.
a. you	b. your	c. you're	d. yours		L.
15. Was it br	other I saw last v	week?		7	
a. you	b. your	c. you're	d. yours	$O_{\mathbf{a}}$	<b>&gt;</b>
16. I hope that	_ happy in your	new job.			
a. you	b. your	c. you're	d. yours	(0)	
17. I hope you get lots	of presents on _	birthday	y.	<b>)</b> '	
a. you	b. your	c. you're	d. yours		
18 not going	out looking like	that.			
a. You	b. Your	c. You're	d Yours		
19. I'm coming over to	house	to sort this out.			
а. уон	b. your	c. yeu're	d. yours		
20. Do you know wher	regoing	Bay			
a. you	b. your	c. you're	d. yours		
21. The applause show	ed how deeply ti	he presentation	had	the audience.	
a. affect	effect	c. affected	d. effected		
22. His attitude was		by his upbrir	nging.		
a. affect	b. effect	c. affected	d. effected		
23. No matter what he	does, it will have	e no	on me.		
a. affect	b. effect	c. affected	d. effected		
24. No matter what he	does, it will not		me.		
a. affect	b. effect	c. affected	d. effected		
25. How was the team		by the loss of	f their coach?		
a. affect	b. effect	c. affected	d. effected		

٠							#≩
	26. WI	hat is the type o	of introduction ca	alled, when it is t	required t	o introduce you	rself in quick time frame?
		a. Self-introd	uction b. Gr	roup introduction	n c.Elev	vator introduction	on d. None of these
	27. Ch	oose the best o	ption which suits	s the best for pro	fessional	introduction.	
		a. Dress appro	opriately	b. Keep eye c	ontact	c. Be confide	nt d. All of these
	28. A 1	non – formally	prepared speech	is called.			
		a. Extempore	speaking	b. Presentatio	ក	c. Debate	d. None of these
	29. WI	hich of these ele	ement is not invo	olved in the proc	ess of cor	mmunication?	<b>6.</b>
		a. Pipe	b. Sender	c. Message	d. Ch	annel	W
	30. WI	hich of these is	the third elemen	t of communicat	ion?		
		a. Sender	b. Receiver	c. Channel	d. Mes	ssage	·O,
نعد .	o.	hich of these is	the most importa	ant tool of comm	unication	n?	3
	-	a. Body langu	iage b. Ge	stures c. Lai	nguage	d. Posture	) • •
	32. WI	hich of these m	ust be avoided in	any presentation	n?	O	,
		a. Proper gran	nmar b. Co	mplex words	c. Shō	rt sentences	d. Clear voice
	33. Wł	nich of these is	not important in	an oral presenta	tion2	<b>,</b>	•
		a. Words	b. Body langu	iage 🦳	e des	tures	d. Audience size
	34. Wł	nich of these is	the best way to e	stablish a prope	rapport	with audience?	
		a. Pointing fü	nger b. M	aking eye contac	t c. Wa	ving hands	d. Standing erect
	35. In	an oral presenta	ntion, the speaker	r should not	_		
		a. Panic	b. Pause	c. Making eye	e contact	d. Ins	pire
Ç	6. WIک	hich number am	ong the following	ng is divisible by	7?		
		a.77754	7666	c. 77784	d. 564	3	
	37. WI	hich number ad	ong the following	ng is divisible by	8?		•
		a. 762928	b. 220953	c. 19537455	d. Non	e of these	
	38. W	hich number ar	nong the followi	ng is divisible by	y bo <b>th</b> 7 a	and 11?	
		a. 4540074	b. 293076	c. 1793498	<b>d.</b> 574	0702	
	39. WI	hich of the follo	owing number is	divisible by 63?			
		a. 492815	b. 4107872	c. 5893407	d. 622	1628	
	40. WI	hich number is	divisible by 18?				

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CENTRAL

41. What is the un	it digit in the proc	luct (365 x 659)	c 771)?	
a. l	b. 2	c. 4	d. 6	
42. What is the un	it digit in 7105?			
a. 1	b. 5	c. 7	d. 9	
43. How many 3-d	ligit numbers are o	completely divisi	ble 6?	
a. 140	b. 150	c. 151	d. 166	
44. (112 + 122 + 1	32 + + 202) = ?	•		
a. 398	b. 2485	c. 4232	d.1563	
45. What is the uni	t digit in (795 - 35	58)?		
a. 0	b. 4	c. 6	d. 7	
46. What will be re	mainder when 172	200 is divided by	/ 18?	
a. 17	b. 16	c. 1	d. 2	
47. When a number is 9, what is the	r is divided by 13, number?	the remainder is	11. When the same number is divided by 17, then rem	nainder
a. 339	b. 349	c. 369	d none of these	
48. In a division sur the dividend?	m, the divisor is 10	times the quoti	ent and 5 times the remainder. If the remainder is 46, v	what is
a. 4236	b. 4036	c. 4336	d. 5336	
49. On dividing a nu remainder?	umber by 357, we	get 39 as remain	der. On dividing the same number 17, what will be the	3
a. 0	b. 3	c. 5	d. 11	
50. On dividing a nu divided by 5?	imber by 5, we ge	t 3 as remainder.	What will the remainder when the square of the numb	er is
a. 0	<b>5</b> . 1	c. 2	d. 4	
51. How many of the	e following number	ers are divisible l	by 3 but not by 9?	
2133, 2343,	3474, 4131, 5286,	, 5340, 6336, 734	17, 8115, 9276	
a. 5	b. 6	c. 7	d. None of these	
52. The difference b	etween the place	value and the fac	e value of 6 in the numeral 856973 is	
a. 973	b. 5994	c. 5973	d. 435	, a
53. The smallest 6-di	igit number exactly	y divisible by 11	l is:	
a. 111111	<b>b</b> . 11077	c. 100011	d. 2233109	

	•			3/	<i>\</i> E∫
54. The largest 5-c	ligit number exactly di	visible by 91 is:		CENTR	\$ 2 \ \ \ \ \
a. 88899	ь. 99918	c. 45361	d. 98978	· · ·	Jus /
55. What is the un	it digit in (4137)754?			MAGAR	340 
. a. 1	b. 3	c. 7	d. 9		
Read the f	ollowing passages and	answer the question	ons given below (C	Q56 – 65)	
		The Greening	of the aged		
see there are list uninterested, are consequence of setting.	homes for the aged is stless, unresponsive, and turned away from of old age. Rather, it is t	nd often incapable hers. Their debilita he inevitable resula	of performing simated physical and e t of being treated li	nple tasks. They motional condition ke a passive obje	appear anmotivated, one's not a necessary est iman institutional
they could reve consisted of 91 crucial psychol be an actor in I	roung researchers from erse the debilitated con residents, aged 65 to 9 ogical process missing ife's drama, we must a the main ingredient in	ndition of resident 0, all well enough in such institution act, decide, and be	is in one of these of to be walking about is was taking mestage responsible for the	old-age homes ( n. The investigat delibility for one	1976). Their sample ors reasoned that the sown decisions. To
56. How are the re	sidents of old age hom	es described in par	nagraphi 19		
a. Healthy	b. Sad	c. Uncom	mon d. W	eak, poor and tro	oubled
57. According to t	he author, what is the r	eason for their poo	or condition?		
a. Left out	feel b. Unint	erested c.	III treated like a pa	ssive object	d. None of these
58. (Par. 2) What	was the researchers' hy	pothesis; i.e., wha	t idea was their res	earch based on?	
a. Improvi c. Less co	ng self esteem mpetence		responsibility the condition of th	e poor	
39. (Par. 2) What i	is the main ingredient i	n self-esteem and	confidence?		
a. Act and	decide b. Dec	ision making	c. Debilitated	d condition	d. None of these
received instruction for improving to as a present — instructions that	cout half of the partic ctions that emphasized the quality of life in the but they were told the at stressed the respons as a present and inform	the need for them them them to home. They were you had to care for ibility of the staff	to take more respon then asked to choo it. In contrast, the to provide good so	sibility for caring se a plant from a second group of ervices for the re	g for themselves and mong a box of them patients was given
behavioural me	the enhanced sense casures, the experimen	tal group ("I'll do	it myself") showe	ed significant im	provement over the

b. Behavioural measures

d. None of these

60. (Par. 4) How did the researchers measure the results of the study?

c. Questionnaire ratings and behavioural measures

a. Questionnaire ratings

						3			
61. W	Which group improved mo	ore?							
	a. Experimental	b. Comparison	c. Both	d. None of these					
62. Ir	62. In what areas did the better group show improvement?								
	a. Alertness	b. Active participation	c. Sen	se of well being	d. All of these				
ha res en ex	5. Eighteen months later, these positive results still persisted, as indicated by the nurses' higher ratings of the happiness, sociability, and vigor of the personally responsible group. But most startling of all, encouraging the residents to be responsible for themselves and their plants made them live longer! the overall death rate for the entire nursing home during an eighteen-month period prior to the experiment was 25 percent. Following the experiment, only 15 percent of the personally responsible residents died, compared to twice as many for the no-responsibility group.								
	conclusion, psychologica e very process of life and		d not only impro	ove mood and attitudes	the seem to affect				
63. (F	Par. 5) How were results 1	18 months later?		30					
	a. Results perished	b. No change	c. Res	ults remained	d. None of these				
64. W	That was the most surprise	ing finding of the study?	(	3'					
	a. None changed		b. Residents b	ecame brave					
	c. Their plants made th	nem live longer	d. None of the	se					
65. C	hoose the correct conclus	ion from the options give	en below.						
	a. Residents can be cha	anged b. Psy	Hological interv	rentions help residents					
	c. People will not die	d. Non	e of these						
66. W	Then we read only to find	the answer, this technique	e is called.						
	a. Skimming	b. Scanning	c. Churning	d. Wringing					
67. W	hen we read by skipping	through sections of a pas	sage, this techni	que is called.		÷			
	a. Skimming	b. Scanning	c. Churning	d. Wringing					
68. W	Then we read only the hea	dings to identify the answ	wer, this techniq	ue is called.					
	a. Skimming	b. Scanning	c. Chuming	d. Wringing					
69. W	69. Which technique helps you to read up to 1000 words a minute?								
	a. Skimming	b. Scanning	c. Churning	d. Wringing					
70. Which technique is very useful to identify which section of a passage is to be read?									
	a. Skimming	b. Scanning	c. Churning	d. Wringing					
71. In	the 5 stages of listening	process which stage is 're	emembering'?						
	a. Stage 1	b. Stage 2	c. Stage 3	d. Stage 4					

					- 3/ No.
72. In the 5 stages of li	stening process	which stage is 're	eceiving'?		CEMTENT E
a. Stage 1	b. Sta	ge 2	c. Stage 3	d. Stage 4	se /
73. In the 5 stages of li	stening process	which stage is 'u	nderstanding'?		C NAGAP C
a. Stage 1	b. Sta	ge 2	c. Stage 3	d. Stage 5	
74. In the 5 stages of li	stening process	which stage is 'e	valuating'?		
a. Stage 4	b. Sta	ge 1	c. Stage 3	d. Stage 5	
75. In the 5 stages of li	stening process	which stage is 're	esponding'?		<b>*</b>
a. Stage 4	b. Sta	ge l	c. Stage 3	d. Stage 5	My
76. What is the barrier	of listening call	ed if a person has	hearing proble	ms?	$\rightarrow$
a. Egotism	b. Rapid thou	ghts c. Impa	aired hearing	d. None of these	•
77. What is the barrier words?	of listening call	ed if a person's n	nind wanders or	nto topics which are no	t related to speaker's
a. Egotism	b. Rapid thou	ghts c. Imp	aired hearing	d. None of these	·
78. What is the barrier	of listening call	ed if a person is g	given a lot of in	formation to receive?	
a. Egotism	b. Rapid thou	ghts c. Ove	rloaded messag	es d. None of t	hese
79. What is the barrier	of listening call	ed if a person can	not understand	the accent spoken by t	he speaker?
a. Faulty assur	nptions b. Cul	itural differences	c. Egotism	d. None of these	
80. What is the barrier	of listening call	ed if a person this	nks listening is	merely a passive activi	ty?
a. Faulty assur	nptions b. Cul	ltural differences	c. Egotism	d. None of these	
81. P5QR, P4QS, P3Q	Τ, PIQ				
a. 2PQW	b. PQV2	c. P2QU	d. PQ3U		
82. QPO, NML, KJI,	, EDC				
a. HGF	b. CAB	c. JKL	d. GHI		
83.SCD, TER UGH, _	, WKL				
a. CMN	b. UJI	c. VIJ	d. IJT		
84. ELFA, GLHA, IL	IA,, MILN	IA			
a. OLPA	b. KLMA	c. LLMA	d. KLLA		·
85. In a certain code, S	SIKKIM is writte	en as ТНЦЛL, ho	w is TRAĮNĮN	G written in that code?	
a. SQBHOHO	F 6. UQ	BHOIOF	c. UQBHOHO	OI d. UQBHOI	HOF
86. if COMPLETED i	s coded as MOC	CELPDET, then D	IRECTION wi	II be coded as:	
a. RIDTCENO	)J b. \$Ш	DTCENOI	c. RIDTCENC	OI d. RIETCEN	4OI

	٠,			- •	Z.	WHE OF ECH
<b>3</b> 7. E <i>A</i>	AT+THAT≈APP	LE. What is A+I	_+T?		18 18 18 18 18 18 18 18 18 18 18 18 18 1	CENTRAL 6
	a. 13	b. 10	c. 11	d. 9	્રે	LIBRARY
88. SE	ND+MORE=M	ONEY. What is	M+O+N+E+Y?		** <sub>*</sub>	NAGAR ETINE
	a. 11	b. 12	c. 13	d. 14		
89. BA	ASE+BALL=GA	MES. What is G	+A+M+E+S?			
	a. 21	b. 23	c. 25	d. 29		
90. LE	ETS+WAVE=LA	ATER. What is L	+A+T+E+R?			<b>f</b>
	a.12	b. 13	c. 14	<b>d</b> . 15		My
91.DC	NALD+GERAI	LD=ROBERT. W	/hat is R+O+B+	E+R+T?		W
	a. 22	b. 24	c. 26	d. 2	_	0,
92. SC	CD, TEF, UGH,	, WKL			~ '}	)
	a. CMN	b. UJI	c. VIJ	d. UT	$\mathcal{O}$ .	•
93. FA	AG, GAF, HAI, I	AH,		_	J'	
	a. JAK	b. HAL	c. HAL	d. HAI		
94. PR	RAG : QTDK : :	STOP:?	(			
	a. LMNP	b. BDFE	c. QSTG	d ZVRT		
95. EL	F+ELF=FOOL	What is F+O+O	+L?			
-	a. 11	b. 12		d. 14		
96. RC	DADS+CROSS=	DANGER Wha	tAs D+A+N+G+	E+R?		
	a. 28	b. 31	c. 33	d. 35		
97. RA	AB, SCD, TEF,	VIJ				
	a. GVH	b. UGH	c. UVG	d. HGU		
98. SI	RQ, PON MLK	,, GFE				
	a. 13#H	b. JIH	с. ЈНІ	d. IHJ		
99. KI	EL, LFM, MGN	, NHO, OIP,	<del></del>			
	a. JPO	ь. РЈО	c. PJQ	d. None of thes	e	
1.001	E2HI,	, EHI4, E	5HI, EH6I			
	a. EH3I	b. EI3H	c. I2E3H	d. None of the	se	
				***		

P cycle

100X1=100

### ADICHUNCHANAGIRI UNIVERSITY

## First Semester BE Degree Examination (CBSC Scheme)

Time: 3 Hours	Max Marks: 100 marks
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SUB: ENGLISH - 1

Q P Code: 60001

Instructions: 1. Your answer should be specific to the questions asked.

- 2. write the same question numbers as they appear in this question paper.
- 3. Write Legibly

### Question Paper Version - B

#### Answer all the questions 1. How many of the following numbers are divisible by 3 but not by 9? 2133, 2343, 3474, 4131, 5286, 5340, 6336, 7347, 8115, 9276 e. 7 b. 6 d. None of these a. 5 2. The difference between the place value and the face value of 6 in the numeral 856973 is c. 5973 a. 973 b. 5994 d. 435 3. The smallest 6-digit number exactly divisible by 111 is: a. 111111 b. 11077 c. 100011 d. 2233109 4. The largest 5-digit number exactly divisible by 91 is: a. 88899 b. 99918 c. 45361 d. 98978 5. What is the unit digit in (4137)754? a. 1 b. 3 c. 7 d. 9

Read the following passages and answer the questions given below (Q6 - 15)

### The Greening of the aged

- 1. A visit to most homes for the aged is so depressing that second visits are uncommon. The men and women we see there are listless, unresponsive, and often incapable of performing simple tasks. They appear unmotivated, uninterested, and turned away from others. Their debilitated physical and emotional condition is not a necessary consequence of old age. Rather, it is the inevitable result of being treated like a passive object in an institutional setting.
- 2. Recently, two young researchers from Yale University. Ellen Langer and Judith Rodin, decided to see whether they could reverse the debilitated condition of residents in one of these old-age homes (1976). Their sample consisted of 91 residents, aged 65 to 90, all well enough to be walking about. The investigators reasoned that the crucial psychological process missing in such institutions was taking responsibility for one's own decisions. To be an actor in life's drama, we must act, decide, and be responsible for the consequences. To let others decide for us is to lose the main ingredient in self-esteem and competence.

6. How are the residents of ol	d age homes described	d in paragraph 1?						
a. Healthy	b. Sad e.	Uncommon	d. Weak, poor and ti	roubled				
7. According to the author, w	7. According to the author, what is the reason for their poor condition?							
a. Left out feel	b. Uninterested	c. III treate	d like a passive object	d. None of these				
8. (Par. 2) What was the resea	8. (Par. 2) What was the researchers' hypothesis: i.e., what idea was their research based on?							
a. Improving self este	eem b.	Taking responsil	bility					
c. Less competence	d.	Change the cond	ition of the poor					
9. (Par. 2) What is the main is	ngredient in self-estee	m and confidence	??					
a. Act and decide	b. Decision mak	ing c.	Debilitated condition	d. None of these				
<ol> <li>Accordingly, about half of the participants in the study were randomly assigned to a situation in which they received instructions that emphasized the need for them to take more responsibility for earing for themselves and for improving the quality of life in the home. They were then asked to choose a plant from among a box of them as a present—but they were told they had to care for it. In contrast, the second group of patients was given instructions that stressed the responsibility of the staff to provide good services for the residents. They were handed a plant as a present and informed that the nurses would water it for them.</li> <li>The results of the enhanced sense of personal responsibility were dramatic. On questionnaire ratings and behavioural measures, the experimental group ("Ull do it myself") showed significant improvement over</li> </ol>								
well-being.			ness, active participation,	g				
10. (Par. 4) How did the reser		·						
a. Questionnaire ratir			Behavioural measures					
	ngs and behavioural m	casures d.	None of these					
11. Which group improved m		D. J	1.25					
a. Experimental	b. Comparison	c. Both	d. None of these					
12. In what areas did the bette			B C	d. All of these				
<ul> <li>a. Alertness</li> <li>b. Active participation</li> <li>c. Sense of well being</li> <li>d. All of these</li> </ul> 5. Eighteen months later, these positive results still persisted, as indicated by the nurses' higher ratings of the happiness, sociability, and vigor of the personally responsible group. But most startling of all, encouraging the residents to be responsible for themselves and their plants made them live longer! the overall death rate for the entire nursing home during an eighteen-month period prior to the experiment was 25 percent. Following the experiment, only 15 percent of the personally responsible residents died, compared to twice as many for the no-responsibility group.								
, <u>*</u>	ological interventions ess of life and death it		only improve mood and a	ttitudes: they seem to				
13. (Par. 5) How were results	13. (Par. 5) How were results 18 months later?							

b. No change

a. Results perished

c. Results remained

d. None of these

14. What was the most so	urprising finding of the	study?					
a. None changed		b. Residents bec	b. Residents became brave				
e. Their plants m	nade them live longer	d. None of these					
15. Choose the correct co	onclusion from the opti	ons given below.					
a. Residents can	be changed	b. Psychological interven	ntions help residents				
c. People will no	ot die	d. None of these					
16. When we read only t	o find the answer, this	technique is called.					
a. Skimming	b. Scanning	c. Churning	d. Wringing				
17. When we read by ski	ipping through sections	s of a passage, this techniq	ue is called.				
a. Skimming	b. Scanning	e. Churning	d. Wringing				
18. When we read only t	the headings to identify	the answer, this technique	e is called.				
a. Skimming	b. Scanning	e. Churning	d. Wringing				
19. Which technique helps you to read up to 1000 words a minute?							
a. Skimming	b. Scanning	e. Churning	d. Wringing				
20. Which technique is very useful to identify which section of a passage is to be read?							
a. Skimming	b. Scanning	c. Churning	d. Wringing				
21. In the 5 stages of list	tening process which st	tage is 'remembering'?					
a, Stage 1	b. Stage 2	c. Stage 3	d. Stage 4				
22. In the 5 stages of list	tening process which s	tage is 'receiving'?					
a. Stage 1	b. Stage 2	c. Stage 3	d. Stage 4				
23. In the 5 stages of lis	tening process which s	tage is 'understanding'?					
a. Stage 1	b. Stage 2	c. Stage 3	d. Stage 5				
24. In the 5 stages of lis	tening process which s	tage is 'evaluating'?					
a. Stage 4	b. Stage I	c. Stage 3	d. Stage 5				
25. In the 5 stages of lis	25. In the 5 stages of listening process which stage is 'responding'?						
a. Stage 4	b. Stage I	c. Stage 3	d. Stage 5				
26. What is the barrier of	of listening called if a p	erson has hearing problen	ns?				
a. Egotism	b. Rapid thoughts	c. Impaired hearing	d. None of these				
27. What is the barrier of words?	of listening called if a p	person's mind wanders ont	o topics which are not related t	o speaker's			

c. Impaired hearing

b. Rapid thoughts

a. Egotism

d. None of these

28. What is the b	parrier of listening cal	led if a person is j	given a lot of inf	ormation to receive?
a. Egotis	sm b. Rapid tho	ights e. Ove	rloaded message	d. None of these
29. What is the b	parrier of listening cal	led if a person car	nnot understand	the accent spoken by the speaker?
a. Faulty	assumptions b. Cu	ltural differences	c. Egotism	d. None of these
30. What is the b	parrier of listening cal	led if a person thi	nks listening is n	nerely a passive activity?
a. Faulty	assumptions b. Cu	ltural differences	c. Egotism	d. None of these
31. P5QR, P4QS	6. P3QT P1Q'	V		
a. 2PQW	b. PQV2	c. P2QU	d. PQ3U	
32. QPO. NML,	KJI,, EDC			
a. HGF	b. CAB	c. JKL	d. GHI	
33.SCD, TEF, U	GH, .WKL			
a. CMN	b. UJI	c. VIJ	d. IJT	
34. ELFA, GLH	A. ILJA,, ML)	NΛ		
a. OLPA	b. KLMA	c. LLMA	d. KLLA	
35. In a certain c	ode, SIKKIM is writt	en as THLJIL, ho	ow is TRAINING	written in that code?
a. SQBF	IOHOF 6. UC	рвноюб	c. UQBHOHO	l d. UQBHOHOF
36. if COMPLET	TED is coded as MO	CELPDET, then E	DIRECTION will	be coded as:
a. RIDT	CENOJ b. SII	OTCENOI	c. RIDTCENO	d. RIETCENOI
37. FAT+THAT	=APPLE, What is A	- <u>L</u> +T?		
a. 13	b. 10	c. 11	d. 9	
38. SEND=MOF	RE=MONEY. What is	s M+O+N+E+Y?		
a. 11	b. 12	c. 13	d. 14	
39. BASE+BAL	L=GAMES. What is	G+A+M+E+S?		
a. 21	b. 23	c. 25	d. 29	
40. LETS+WAV	E=LATER. What is	L+A+T+E+R?		
a.12	b. 13	c. 14	d. 15	
41.DONALD+G	ERALD=ROBERT.	What is R+O+B+	E+R+T?	
a. 22	b. 24	c. 26	d. 2	

42. SCD. TEF, UGH,  $_{\tt local}$  , WKL

43. FAG, GAF, HAI	l. IAH		
a. JAK	b. HAL	e. HAL	d. HAI
44. PRAG : QTDK :	:: STOP : ?		
a. LMNP	b. BDFE	c. QSTG	d. TVRT
45. ELF+ELF=FOO	L. What is F+O+6	O+L?	
a. l l	b. 12	c. 13	d. 14
46. ROADS+CROS	S=DANGER. Wh	at is D+A+N-	G+E+R?
a. 28	b. 31	c. 33	d. 35
47, RAB, SCD, TEF	, VIJ		
a. GVH	b. UGH	e. UVG	d. HGU
48. SRQ, PON, ML	KGFE		
a. IJH	Ь. ЛН	e. JHI	d. IHJ
49. KEL. LFM, MG	N, NHO, OIP,		
a. JPO	b. PJO	c. PJQ	d. None of these
50. E2HI.	EHI4. E.	5HI. EH6I	
a. EH31	b. EI3H	e. 12E311	d. None of these
51. The students who	apply to Enginee	ering colleges	drop out because of lack of guidance.
a. True	b. False	c. Neutral	d. Not Applicable
52. The students are	not responsible fo	or the decisions	s that they take to join Engineering.
a. True	b. False	c. Neutral	d. Not Applicable
53. There is a massiv	e difference betw	een what a col	lege expects than a school from its students.
a. True	b. False	c. Neutral	d. Not Applicable
54. The students mu Engineering.	st have clear pict	ture of what t	hey want to become after engineering right from 1st year of
a. True	b. False	c. Neutral	d. Not Applicable
55. The students mus	t not approach the	e library for re	ferring to books which is prescribed in the syllabus.
a. True	b. False	c. Neutral	d. Not Applicable
56. An Engineer, in o	order to be perform	ning well in th	eir career must have only technical knowledge.
a. True	b. False	c. Neutral	d. Not Applicable
57. Engineers are the	reasons for which	n the commerc	e, trade and marketing has experienced drastic improvement.

d. Not Applicable

a. True

b. False

c. Neutral

58. In order to be an ef	Tective Enginee	r, one musi pay	closer and keen alter	mon to minutest details
a. True	b. False	c. Neutral	d. Not Applicable	
59. Engineers do not re	equire leadership	p as well as ma	nagement skills.	
a. True	b. False	c. Neutral	d. Not Applicable	
60. Engineers know th	e value of time.			
a. True	b. False	c. Neutral	d. Not Applicable	
61 mom is o	n the phone.			
a. You	b. Your	c. You're	d. Yours	
62. looking a	lot better than	you did.		
a. You	b. Your	c. You're	d. Yours	
63. If in tow	n, come by and	see us.		
a. you	b. your	e. you're	d. yours	
64. If you do it again	certain	to get sent to the	he office.	
a. you	b. your	c. you're	d. yours	
65. Was it b	rother I saw last	week?		
a, you	b. your	c. you're	d. yours	
66. I hope that	happy in you	r new job.		
a. you	b. your	c. you're	d. yours	
67. I hope you get lot	s of presents on	birthd	lay.	
a. you	b. your	c. you're	d. yours	
68 not goin	g out looking lik	ke that.		
a. You	b. Your	c. You're	d. Yours	
69. I'm coming over t	o hous	se to sort this or	11.	
a. you	b. your	c. you`re	d. yours	
70. Do you know wh	ere goi	ng?		
a, you	b. your	c, you're	d. yours	
71. The applause sho	wed how deeply	the presentation	on had	_ the audience.
a. affect	b. effect	c. affected	d. effected	
72. His attitude was	<u></u>	by his upl	oringing.	

b. effect

a, affect

c. affected

d. effected

73. No matter	what he	does, it will hav	e no	on	me.		
a. affo	ect	b. effect	c. affected	d. e	ffected		
74. No matter	what he	does, it will not		, <u>.</u> m	ie.		
a. affe	ect	b. effect	c. affected	d. e	ffected		
75. How was	the team		by the loss of	f their co	each?		
a, affo	ect	b. effect	c. affected	d. e	ffected		
76. What is th	e type of	introduction cal	lled, when it is re	quired t	o introduce your	self in qui	ck time frame?
a. Sel	f-introduc	etion b. Gre	oup introduction	c. Elev	ator introduction	1	d. None of these
77. Choose th	e best opt	tion which suits	the best for profe	essional	introduction.		
a. Dre	ss approp	oriately	b. Keep eye co	intact	e. Be confident	ı	d. All of these
78. A non – fo	ormally p	repared speech i	is called.				
a. Ext	empore s	peaking	b. Presentation	ı	c. Debate	d. None	of these
79. Which of	these eler	ment is not invol	lved in the proces	ss of cor	mmunication?		
a. Pip	e	b. Sender	c. Message	d. Cha	innel		
80. Which of	hese is th	ne third element	of communication	on?			
a. Sen	der	b. Receiver	c. Channel	d. Mes	sage		
81. Which of i	hese is th	ne most importai	nt tool of commu	inication	?		
a. Boo	ly langua	ge b. Ges	tures c. Lang	guage	d. Posture		
82. Which of t	hese mus	t be avoided in	any presentation'	?			
a. Pro	per gramı	nar b. Con	iplex words	c. Shor	t sentences	d. Clear	voice
83. Which of t	hese is no	ot important in a	an oral presentati	on?			
a. Wo	rds	b. Body langua	ige	c. Gest	ures	d. Audie	ence size
84. Which of t	hese is th	e best way to es	stablish a proper	rapport v	with audience?		
a. Poir	nting fing	er b. Ma	king eye contact	c. Wa	ving hands	d. Stand	ing erect
85. In an oral p	oresentati	on, the speaker	should not	_			
a. Pan	ie	b. Pause	c. Making eye o	contact	d. Inspi	ire	
86. Which nun	nber amo	ng the following	g is divisible by 7	7?			
a.7775	4	b. 7666	c. 77784	d. 5643	3		
87. Which nun	iber amo	ng the following	g is divisible by 8	3?			

e. 19537455 d. None of these

a. 762928

b. 220953

88. Which number among the following is divisible by both 7 and 11?								
a. 4540		c. 1793498	d. 5740702					
89. Which of th	89. Which of the following number is divisible by 63?							
a. 4928	15 b. 4107872	c. 5893407	d. 6221628					
90. Which num	ber is divisible by 18?							
a. 5279	4 b. 432181	c. 1725516	d. None of these					
91. What is the	91. What is the unit digit in the product (365 x 659 x 771)?							
a.1	b. 2	c. 4	d. 6					
92. What is the	unit digit in 7105?							
a. 1	b. 5	c. 7	d. 9					
93. How many	3-digit numbers are co	ompletely divisibl	e 6'?					
a. 140	b. 150	c. 151	d. 166					
94. (112 + 122	+ 132 + + 202) = ?							
a. 398	b. 2485	c. 4232	d.1563					
95. What is the	unit digit in (795 - 35	8)?						
a. 0	b. 4	c. 6	d. 7					
96. What will b	ne remainder when 172	200 is divided by	18?					
a. 17	b. 16	c. I	d. 2					
97. When a number is divided by 13, the remainder is 11. When the same number is divided by 17, then remainder is 9, what is the number?								
a. 339	b. 349	c. 369	d. none of these					
98. In a divisio		0 times the quotie	ent and 5 times the remainder. If the remainder is 46, what is					
a. 4236	6 b. 4036	c. 4336	d. 5336					
99. On dividin remainder	•	e get 39 as remain	der. On dividing the same number 17, what will be the					
a. 0	b. 3	c. 5	d. 11					
100. On dividing a number by 5, we get 3 as remainder. What will the remainder when the square of the number is divided by 5?								
a. 0	b. 1	e. 2	d. 4					

# First Semester BE Degree Examination (CBSC Scheme)

Time: 3 Hours Max Marks: 100 marks

### **SUB: ENGINEERING PHYSICS**

Q P Code: 60003

Instructions: 1. Answer five full questions.

- 2. Choose one full question from each module
- 3. Your answer should be specific to the questions asked.
- 4. write the same question numbers as they appear in this question paper.
- 5. Write Legibly

### MODULE - 1

1.	a.	Define damped oscillations and forced oscillations with examples.	4 marks
1.	b.	Describe the construction and working of Reddy Shock tube.	6 marks
	c.	Define simple harmonic motion. Derive the equation for simple harmonic motion using Hooke's law.	6 marks
	d.	Evaluate the resonance frequency of a spring of force constant 2467 N/m, carrying	4 marks
		a mass of 100 gm.  OR	
			6 marks
2.	а.	Define Mach number. Write the applications of shock waves.	10 marks
	b.	Discuss the theory of forced vibrations and hence obtain the expression for amplitude.	
	С.	Find the frequency of oscillation of a free particle executing simple harmonic	4 marks
	•	motion of amplitude 0.35 m if the maximum velocity it can attain is 220 m/s.	
		MODULE – 2	
3.	a.	Define young's modulus, bulk modulus and rigidity modulus and derive a relation	8 marks
		between them.	
	b.	Define bending moment of a beam. Derive an expression for bending moment	8 marks
		$\left(B,M = \left(\frac{Y}{R}\right)Ig\right)$	
	c.	A wire length 1 m and diameter 1 mm is clamped at one of its ends. Calculate the couple required to twist the other end by 90. Given rigidity modulus = $2.8 \times 10^{10} \text{ N/m}^2$ .	4 marks
		OR	
4.	a.	State Hooke's law of elasticity. Derive an expression for young's modulus Y of a	10 marks
		material of a single cantilever.	6 marks
	b.	What are torsional oscillations? Mention the expression for couple per unit twist of	O marks
		a solid cylinder and expression for period of oscillation.	4 manules
	c.	A solid lead sphere of radius 10.3 m is subjected to a normal pressure of 10 N/m <sup>2</sup>	4 marks
		acting all over the surface. Determine the change in its volume.	

MODULE – 3  a. Define lattice and basis. Explain seven crystal systems with neat diagram.  Continual fibers with suitable diagrams.	10 marks 6 marks
<ul> <li>b. Discuss different types of optical floors and</li> <li>c. A monochromatic X-ray beam of wavelength 0.7 Å undergoes first order Bragg</li> <li>reflection from the plane (302) of cubic crystal at a glancing angle of 35. Calculate</li> </ul>	4 marks
6. a. Derive an expression for numerical aperture in terms of refractive index of core and	6 marks
	4 marks
cladding.	6 marks
<ul> <li>b. Derive Bragg's law.</li> <li>c. Derive an expression for interplanar spacing of a crystal in terms of miller indices.</li> <li>d. Calculate the V-number and number of modes supported by an optical fiber of core index 1.54 and cladding index 1.5 at operating wavelength 1.3 μm. The diameter of the fiber is 50 μm.</li> </ul>	4 marks
MODULE – 4  7. a. Set up 1-dimensional time independent Schrodinger's wave equation and mention	8 marks
any two properties of wave function.  any two properties of wave function.	8 marks
<ul> <li>b. Derive an expression for each coefficients.</li> <li>c. An electron has a speed of 500 m/s correct up to 0.01 %. With what fundamental accuracy the position of the electron can be located?</li> </ul>	4 marks
(c) that the electron cannot exist inside the nucleus using Heisenberg's	6 marks
<ul> <li>a. Show that the electron and uncertainty principle.</li> <li>b. What is a laser? Describe the construction and working of CO<sub>2</sub> laser with the help.</li> </ul>	10 marks
<ul> <li>of energy level diagram.</li> <li>c. A pulsed laser emits of pulses of 20 ns duration with an average power / pulse being 0.1 Mw. If the number of photons emitted per pulse is 6.981 x 10<sup>15</sup>, calculat the wavelength of the laser.</li> </ul>	4 marks
MODULE – 5  9. a. Define Fermi level and Fermi factor. Write the assumptions of quantum free	6 marks
	6 mark
b. Derive an expression for conductivity of semiconductors.	4 mark
<ul> <li>b. Derive an expression for each</li> <li>c. What are polar and non polar dielectries?</li> <li>d. The Fermi level in silver is 5.5 eV at 0°K. Calculate the number free electrons / unit volume.</li> </ul>	
10. a. Obtain an expression for Fermi energy at 0° K.	6 mar
	4 mar
<ul> <li>b. Derive Clausius-Mossotti equation.</li> <li>c. Discuss solid, liquid and gaseous dielectrics with examples.</li> <li>d. The following data are given for intrinsic germanium at 300 K. The electron and hole mobilities are 0.85 m<sup>2</sup>V<sup>-1</sup>s<sup>-1</sup> and 0.04 m<sup>2</sup>V<sup>-1</sup>s<sup>-1</sup>. Find the resistivity of the sample if the intrinsic carrier concentration is 7 x 10<sup>12</sup> m<sup>-3</sup>.</li> </ul>	
Sample is me	

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#### ADICHUNCHANAGIRI UNIVERSITY

# First Semester BE Degree Examination (CBSC Scheme)

Time: 3 Hours Max Marks: 100 marks

## SUB: CIVIL ENGINEERING AND MECHANICS

Q P Code: 60005

Instructions: 1. Answer five full questions.

- 2. Choose one full question from each module
- 3. Your answer should be specific to the questions asked.
- 4. Write the same question numbers as they appear in this question paper.

Explain the role of Civil Engineer in Infrastructure development of the country

5. Write Legibly

## **MODULE-1**

10 Marks

1 a With neat sketch explain different types of dams. 10 Marks

#### OR

- 2 a Explain briefly any two scopes of Civil Engineering. 10 Marks
  - b Explain the Effect of Infrastructure on Socio-economic development a country 10 Marks

#### **MODULE-2**

- 3 a Explain the basic idealization of Civil Engineering 10 Marks
  - b State and prove Varignon's Theorem 5 Marks
  - c A block weighing 10kN is resting on an inclined plane as shown in Fig.Q.3(c). 5 Marks Determine its components normal to and parallel to the inclined plane. The plane makes an angle 20° with the horizontal.

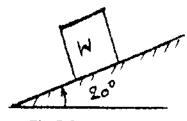
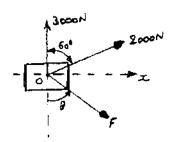


Fig.Q.3(c)

#### OR

- 4 a State Law of Transmissibility of Forces, Law of superposition and Law of physical 6 Marks independence

  b Define Force and its characteristics 4 Marks
  - c A body is subjected to the three forces as shown in Fig.Q.4(c). Determine the direction of 10 Marks the force F so that the resultant is in 'x' direction, when i) F=5000N ii) F=3000N.



#### MODULE-3

5 a Mention the equations of Equilibrium required for Coplanar concurrent and Coplanar non-concurrent system of forces

4 Marks

b State and Prove Lami's theorem

6 Marks

c Two spheres of radius 100mm and weight 5kN is in rectangular box as shown in Fig.Q5(c). Calculate the reactions at the point of contacts.

10 Marks

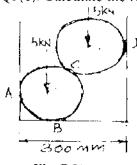


Fig.Q5(c)

OR

6 a With neat sketch explain different types of Beams.

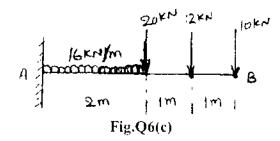
6 Marks

b What are statically determinate and indeterminate beams

4 Marks

c Determine the reactions for a cantilever beam fixed at 'A' and free at 'B' loaded shown in Fig.Q6(c).

10 Marks



#### **MODULE-4**

7 a Derive the centroid of a Semicircle by the method of Integration.

8 Marks

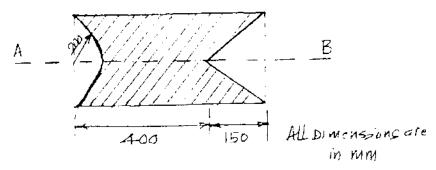
b Locate the centroid of the plane shown in Fig.Q7(b)

12 Marks



8 a Determine radius of gyration of shaded area shown in Fig.Q8(a) about the axis AB.

12 Marks



b State and prove Parallel axis theorem.

8 Marks

#### **MODULE-5**

- 9 a Derive an expression for Greatest height reached by a particle and the time it takes
- 8 Marks

12 Marks

b A stone is dropped from the top of a tower 50m high. At the same time another stone is thrown up from the ground with a velocity of 25m/s. At what distance from the top and after how much time the two stones cross each other?

#### OR

10 a What is super elevation? Mention its advantages and disadvantages.

8 Marks

b A cricket Ball is thrown from a height of 1.8m above the ground level at angle 30° with the horizontal with a velocity 12m/s and is caught by the fielder at a height of 0.6m above the ground. Determine the distance between the two players.

12 Marks

\*\*\*\*

## ADICHUNCHANAGIRI UNIVERSITY

# First Semester BE Degree Examination (CBSC Scheme)

Time: 3 Hours

Max Marks: 100 marks

## SUB: ELEMENTS OF MECHANICAL ENGINEERING

## Q P Code: 60010

Instructions: 1. Answer five full questions.

- 2. Choose one full question from each module
- 3. Your answer should be specific to the questions asked.
- 4. Write the same question numbers as they appear in this question paper.
- 5. Write Legibly

## MODULE-1

10 marks a Explain: (i) Hydroelectric Power Plant (ii) Wind Power Plant. 10 marks b List the Boiler Mountings and Accessories. Explain any four. OR 12 marks a What are turbines? Explain Kaplan turbine with neat sketches. 08 marks Differentiate between Open and Closed cycle Gas Turbines. **MODULE-2** 10 marks a With PV diagram explain Otto cycle and Diesel Cycle 3 10 marks eylinder collected from a 4-stroke single data were b Following engine at full load. Bore=200mm, stroke = 280mm, speed - 300rpm, indicated mean effective pressure = 5.6 bar, torque on the brake drum=250 Nm, oil consumed= 4.2 kg/hr

## OR

and calorific value of oil = 41 MJ/kg. Determine mechanical efficiency, indicated thermal

4 a With a neat sketch explain the working of Vapour Absorption Refrigeration system
b Draw neat sketch and explain the working of Domestic Air Conditioner 10 marks

## **MODULE-3**

5 a With neat sketches explain

efficiency and brake thermal efficiency.

(i) Facing

10 marks

- (ii) Thread cutting
- (iii) Reaming
- (iv) Counter Sinking
- (v) Boring.

	b	With neat sketches explain working Operations of	10 marks
		(i) Surface Grinding	
		(ii) Centerless Grinding	
		OR	
6	a	With a neat sketch explain Electric Arc Welding	10 marks
	b	Differentiate between Soldering and Welding	10 marks
		MODULE-4	
7	a	Define (i) Velocity ratio	04 marks
		(ii) Creep	
		(iii) Slip	
		(iv) Lubrication	
	b	Explain Idler and Stepped Cone drive mechanisms.	12 marks
	С	Two mating gears have 30 and 45 involute teeth of module 12 mm and 20 <sup>0</sup> pressure	04 marks
		angle. Determine velocity ratio and centre distance between gears.	
		OR	
8	ħ	Explain Ball bearings and Roller bearings with neat sketches	12 marks
	b	Discuss any four properties of a good lubricant.	08 marks
		MODULE-5	
9	a	What are engineering materials? Classify and explain each.	06 marks
	h	Write a short note on (i) Cast iron (ii) Steel	08 marks
	c	Explain any three properties of polymeric materials	06 marks
		OR	
10	a	What are Matrix and Reinforcements? Explain the classification of Composite materials	08 marks
	b	Explain the applications of Composites in Aircraft and automobile industries.	12 marks

\*\*\*\*\*

2.1

## ADICHUNCHANAGIRI UNIVERSITY

## First Semester BE Degree Examination (CBSC Scheme)

Time: 3 Hours

Max Marks: 100 marks

## Sub: Basic Electrical Engineering

## **Q P Code:** 60004

Instructions: 1. Answer five full questions.

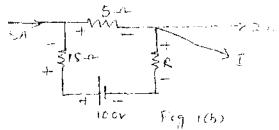
- 2. Choose one full question from each module
- 3. Your answer should be specific to the questions asked.
- 4. Write the same question numbers as they appear in this question paper.
- 5. Write Legibly

## Module-1

١ State and explain Ohms and mention any two limitations

6 Marks

A portion of the network is shown in Fig 1(b) with the polarities as indicated. The voltage 8 Marks across the  $15\Omega$  resistor if 30V, find the value of resistance R and the current L



Define RMS value of an alternating quantity and derive the expression for the same.

6 Marks

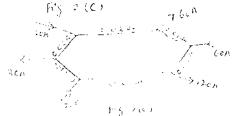
#### OR

In the network shown in Fig2(a), find the Voltages Vac, Vec, Vac and Vad 2

6 Marks

Determine the current in all branches of the network shown in Fig2(e).

8 Marks



Define average value of an AC quantity and derive the expression for the same.

6 Marks

#### Module-2

With circuit diagram and wave forms show that the average power is zero in pure 6 Marks 3 resistance. 8 Marks b With circuit diagram and Phasor diagram derive the expression for Line Voltage and Current for a Star connected balanced load. 6 Marks A balanced Star connected load of  $(8 - j6) \Omega$  phase is connected to a 3-phase. 230V supply. Find the line current, powerfactor, active power and reactive power. Show that the average power demand is never zero in case of series RL circuit with 6 Marks relevant circuit and waveforms. b Show that two wattmeters are sufficient to measure 3-phase power with relevant circuit 8 Marks and phasor diagram. 6 Marks Three similar coils are connected in star takes a total power of 1.5kw at a p.f of 0.2 lagging from a 3-9, 00v, 50Hz supply. Determine the parameters of the circuit. Module-3 8 Marks 5 Explain the constructional features of various types of transformers. 4 Marks A 400[230v, 50Hz single phase transformer is provided with 500 turns on LV side. Calculate No. of turns on the HV side (1)(II)Effective area of cross section of the core of the flux density to be less than  $1.4 \text{wb/m}^2$ What do you mean by Electric Shock? With neat diagram, explain the pipe earthing? 8 Marks OR. Derive the condition for maximum efficiency for a transform 6 Marks 6 A single phase 20KVA transformer has 1000 primary and 2500 secondary turns. The net 6 Marks cross sectional area in 100 cm<sup>2</sup>. When the primary winding is connected to 500V, 50Hz supply. Calculate the following (1)The maximum value of flux density (11)The secondary induced voltage (III)Primary and secondary full load currents With circuit diagram and truth table. Explain the operation of three way control of lamps 8 Marks

## Module-4

7	a	Derive the EMF equation of a DC generators	6 Marks
	h	Explain the various characteristics of a DC shunt motor	8 Marks
	c	A 4 pole DC Shunt motor tales22.5A from a 250V supply. The armature resistance is	6 Marks
		$0.5\Omega$ and shunt field resistance in $125\Omega$ . The armature is wave wound with 300	
		conductors. If the flux/pole is 0.02wbs, Calculate (I) Speed (II) Torque developed and (III) power developed.	
		OR	
8	a	What is a de generator? What is the basic principle on which it is working? Give the classification of DC generators.	6 Marks
	b	Explain the various characteristics of series motor with relevant diagrams.	8 Marks
	c	A series motor runs at 600rpm when taking a current of 110A from a 230V supply. Given	6 Marks
		that $R_a=0.12\Omega$ , $R_{se}=0.03\Omega$ , the useful flux-pole for 110A is 0.024wb and that for 50A is	
		0.0144wbs. Calculate the speed when the current has fallen to 50A.	
		Module-5	
9	a	Explain the constructional features of various types of synchronous generators.	8 Marks
	b	What is an IM? Explain the principle of operation	6 Marks
	Ç	A 3 phase IM is wound for 8 poles if the full load slip is 2.5%. Calculate	6 Marks
		(1) Synchronous speed	
		(II) Slip Speed	
		(III) Rotor speed (IV) Rotor frequency	
		(IV) Rotor frequency  OR	
10	a	With usual notations, derive an expression for the induced voltage for a synchronous	
- 0		generator	6 Marks
	b	What is a slip? Explain its significance	6 Marks
	c	An 8 pole alternator runs at 750 rpm and supplies power to a 6 pole IM which has a full load slip of 3%. Find the full load speed of the motor and frequency of rotor emf.  *******	8 Marks

Page 3 of 3

1 st Sem' P'cycle

#### ADICHUNCHANAGIRI UNIVERSITY

18ELE13/23

## First Semester BE Examination July 2021

(CBCS Scheme)

Time: 3 Hours

Max Marks: 100 marks

## Sub: Basic Electrical Engineering

O P Code: 60004/60014

Instructions: 1. Answer five full questions.

- 2. Choose one full question from each module
- 3. Your answer should be specific to the questions asked.
- 4. write the same question numbers as they appear in this question paper.
- 5. Write Legibly

#### Module - 1

a State and explain Ohm's law and mention its limitations.

6 marks

- b Derive an expression for the equivalent resistance of three resistors which are connected in series and also explain the characteristics of series circuits.
- 8 marks

6 marks

c A 8 ohm resistor is in series with a parallel combination of two resistors 12 ohm and 6 ohm. If the current in the 6 ohm resistor is 5A determine the total power dissipated in the circuit.

 $\mathbf{OR}$ 

2 a State and explain the Kirchhoff's laws with an example

- 7 marks
- b Define RMS value of alternating current show that its value is proportional to maximum value.
- 7 marks
- c Define the following with respect to sinusoidal alternating quantity: (i) Average 6 marks Value, (ii) Form factor and, (iii) peak factor
  - Module − 2
- 3 a Show that in a pure inductor the current lag behind the voltage by 90°. Also draw the voltage and current waveforms.

6 marks

b A 230 V, 50 Hz ac supply is applied to a coil of 0.06H inductance and 2.5Ω resistance connected in series with a 6.8μF capacitor. Calculate (i) Impedance (ii) Current (iii) Phase angle between current and voltage (iv) power factor (v) power consumed.

7 marks

c Obtain the relationship between line and phase voltages and currents in three phase balanced delta connected system

7 marks

\_ ( )

out the advantages of three phase system as compared to single phase system 6 marks

Show that two wattmeter's measure three phase power with suitable circuit diagram and vector diagrams.

8 marks

- c A coil of resistance 10, and inductance 1.013 H, is connected in series with a 10  $\mu$  F capacitor. Calculate (a) the resonant frequency, (b) the circuit current, when connected to a 240 V, 50 Hz supply, and
- 6 marks

(c) the P.D. developed across the capacitor

## Module – 3

5 a Explain the working principle of transformer.

6 marks

	b	List different types of loss in transformer and explain each one in brief.	8 marks
	С	A 250KVA, 11000/415V,50Hz single phase transformer has 80 turns on secondary. Calculate. (i)The rated primary and secondary currents (ii)The number of primary turns (iii)The maximum value of flux (iv)Voltage induced per turn  Or	6 marks
6	a	What is earthing? Why earthing is required? With the help of sketch Explain plate earthing.	8 marks
	b	With a neat sketch and truth table explain 2 way and 3 way control of lamp.	8 marks
	c	What are the Precautions against electric shock?	4 marks
7	_ }	Module – 4  Explain the working principle of D.C motor with suitable diagrams.  Derive on EMF equation for D.C generator with usual notations.	6 marks
	b	Derive an EMF equation for D.C generator with usual notations	
	c	A shunt generator delivers 195A at terminal voltage of 250V. The armature resistance and shunt field resistance are $0.02\Omega$ and $50\Omega$ respectively. The iron and friction losses equal 950W. Find  (i) E.M.F generated (ii) Cu losses (iii) output of the prime motor commercial, mechanical and electrical efficiencies.	8 marks
		Or , V	
8	a	Discuss the following characteristics for i) series motor ii) shunt motor with relevant plots. i) Ta v/s Ia ii) N v/s Ia	8 marks
	b	Explain the function of following parts of D.C machine.  i) Yoke ii) Field winding iv) Pole shoe v) Pole core vi) Brush	6 marks
	С	A 500V shunt motor has 4 poles and a wave connected winding with 492 conductors. The flux per pole is $0.05$ Wb.the full load current is 20 Amps. The armature and shunt field resistances $0.1\Omega$ and $250\Omega$ respectively. Calculate the speed and the developed torque.  Module – 5	6 marks
a	9	Explain the working principle of 3 phase synchronous generator.	6 marks
,	1.	$\sim$	
	b	Derive an EMF equation for afternator with suitable considerations	8 marks
	c	A 3-phase, 12-pole alternator is coupled to an engine running at 500rpm. The	6 marks
		alternator supplies an induction motor which has a full-load speed of 1455rpm.find the slip and number of poles of the motor	
		Or	_
10	a	Describe the constructional features of 3 phase induction motor with suitable diagrams	8 marks
•	Ь	With a circuit diagram explain the working of a star delta starter for a three phase	7 marks
	X	induction motor  A 3 phase, 6 pole, star connected alternator has 48 slots and 12 conductors per slot on	5 marks
	•	the armature. If the rotor at 1200rpm and Flux per pole is 0.3Wb. The winding factor and pitch factor is 0.95. Calculate the phase e.m.f and line e.m.f.	J marks
		ተ	

## ADICHUNCHANAGIRI UNIVERSITY 18EME15/25

## First/Second Semester BE Examination July 2021

## (CBCS Scheme)

Time: 3 Hours

Max Marks: 100 marks

10 marks

10 marks

## Sub: Elements of Mechanical Engineering

Q P Code: 60010/60019

Instructions: 1. Answer five full questions.

2. Choose one full question from each module

a Define Brazing and explain its working principle

b Distinguish between the welding and Brazing

- 3. Your answer should be specific to the questions asked.
- 4. write the same question numbers as they appear in this question paper.
- 5. Write Legibly

		Module – 1	
1	a b	Explain with a neat sketch working of Solar Power Plant Define any five steam properties	10 marks 10 marks
		OR	
2	a	Explain with a neat sketch working of Kaplan Turbines	10 marks
	b	Explain with a neat sketch working of Open cycle Gas Turbine	10 marks
		Module – 2	
3	a	Using PV diagram explain Diesel cycle	10 marks
	b	Following data are collected from a 4-stroke single cylinder oil engine at full load. Bore=200 mm, stroke = 280 mm, speed = 300 rpm, indicated mean effective pressure = 5.6 bar, torque on the brake drum=250 Nm, oil consumed = 4.2 kg/h and calorific value of oil = 41 MJ/kg. Calculate mechanical efficiency, indicated thermal efficiency and brake thermal efficiency.	10 marks
4	_		10 marks
4	a	Define the following  i. Refrigerating Effect  ii. Ton of Refrigeration  iii. Unit of Refrigeration  iv. Coefficient of Performance  v. Ice Making capacity	TO Marks
	b	Describe with a neat sketch the working of vapour Compression refrigerator.	10 marks
		Module – 3	
5	a	Explain the following operations with neat sketch  (i) Knurling (ii) Counter Sinking (iii) Thread cutting	12 marks
	ь	Explain Cylindrical Grinding with a neat sketch	08 marks
		Or	

## Module – 4

		1.104414				
7	a Explain any 5 advantages of gear drives over belt drives					
	b	Explain with a neat sketch working of Idler Pulley	10 marks			
		Or				
8	a	Explain any 5 properties of a good lubricant .	10 marks			
	b	Explain Ball & Roller Bearings	10 marks			
		Module – 5				
9	a	Differentiate between Ferrous and non-Ferrous metals	10 marks			
	b	Define Engineering materials and explain the composition and applications of any three types of steel	10 marks			
		Or				
10	a	Broadly classify composite materials	10 marks			
	b	What are the advantages and disadvantages of composite materials	10 marks			

## ADICHUNCHANAGIRI UNIVERSITY

## First/Second Semester BE Examination October 2021

18PHY12/22

## (CBCS Scheme)

Time: 3 Hours

Max Marks: 100 marks

Sub: Engineering Physics

O P Code: 60003/60013

Instructions: 1. Answer five full questions.

- 2. Choose one full question from each module
- 3. Your answer should be specific to the questions asked.
- 4. write the same question numbers as they appear in this question paper.
- 5. Write Legibly

#### Module - 1

a Define SHM. Starting from Hooke's law derive the differential equation for SHM. 08 marks
Mention the characteristics of SHM.

b Describe construction and working of Reddy shock tube. Give any two applications. 08 marks

c In a spring mass system, the spring is compressed to 1.6 cm on loading mass of 04 marks 98 kg. Calculate spring constant of the spring.

#### OR

2 a What are forced oscillations? Derive expression for amplitude and phase of forced oscillations.

Discuss the basics of law of conservation of energy, mass and momentum.

06 marks

04 marks

c In a shock tube experiment, it was found that, the shock waves are produced with Mach number 2. The distance between two pressure sensors in a shock tube is 170 mm. In what time the shock waves travel the distance between the sensors? Speed of sound is 340 ms<sup>-1</sup>.

#### Module - 2

3 a Derive relation between Y, K and σ

8 marks

b Describe single cantilever. Derive the expression for Young's modulus of the 8 marks material of rectangular beam.

4 marks

c In stretching experiment, the extension produced in a wire of a load 2.5 kg is 0.45 cm. The length of the wire is 2 m and its radius is 0.013 cm. Find Young's modulus of the wire.

#### Or

4 a Define the different moduli of elasticity. Describe strain coefficients.

8 marks

b What are Torsional oscillations? Derive expression for couple per unit twist of a 8 marks cylinder.

c Calculate the angular twist of a wire of length 0.3m and radius  $0.2 \times 10^{-3}$  m, when a 4 marks torque of  $5 \times 10^{-4}$  Nm is applied. Rigidity modulus =  $8 \times 10^{10}$  Nm<sup>-2</sup>.

## Module – 3

		Module – 3	
5	a	What is space lattice? Describe briefly the Seven Crystal System, with neat diagrams.	08 marks
	b	What is numerical aperture? Obtain an expression for numerical aperture in an optical fiber	08 marks
	c	Draw the following planes in a cubic unit cell (100), (110), (011) and (111)	04 marks
		Or	
6	a	Define coordination number and packing factor. Calculate the APF for SC, BCC and FCC.	10 marks
	b	Discuss the types of attenuation in optical fiber.	06 marks
	c	First order spectrum is formed when X-rays of wavelength 1.5 Å is incident on a crystal at 12°. Calculate the interplanar spacing of the crystal.  Module - 4	04 marks
7	a	State and explain Heisenberg's uncertainty principle. Mention its significance.	6 marks
	b	Describe construction and working of CO <sub>2</sub> laser using energy level diagram.	10 marks
	c	The ratio of population of two energy levels is $1.059 \times 10^{-30}$ . Find the wavelength of light emitted at 330K.	4 marks
		Or	
8	a	Set up one dimensional Schrodinger's time independent equation.	8 marks
	b	Obtain expression for energy density using Einstein's coefficients.	8 marks
	c	The speed of electron is measured to within an uncertainty of 2.2x10 <sup>4</sup> ms <sup>-1</sup> in one dimension. What is the minimum width required by electron to be confined in atom?	4 marks
		Module – 5	
9	a	Give the assumptions of Quantum free electron theory. Discuss two success of QFET.	8 marks
	b	What are dielectrics? Explain types of polarization.	8 marks
	c	The dielectric constant of Sulphur is 3.4. Assuming a cubic lattice for its structure, Calculate the electronic polarizability of Sulphur if it has 3.89 x 10 <sup>28</sup> atoms/m <sup>3</sup> .	4 marks
10	a	Or  Derive expression for electrical conductivity of a Semiconductor.	8 marks
10	b	Derive expression for Fermi energy at temperature 0 K.	8 marks
	¢	Calculate the probability of an electron occupying an energy level 0.02 eV above the	4 marks
		Fermi level at 400K.	
		****	

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#### ADICHUNCHANAGIRI UNIVERSITY

18EGH28

# Second Semester BE Degree Examination July 2021 (CBCS Scheme)

Time: 3 Hours Max Marks: 100 marks

**Sub: ENGLISH II** 

Q P Code: 60011

Instructions: 1. Your answer should be specific to the questions asked.

- 2. write the same question numbers as they appear in this question paper.
- 3. Write Legibly

#### Question Paper Version - A

#### Answer all the questions

100X1=100

- 1 Employees desire professionals who do which of the following?
  - A. Treat others respectfully only when they deserve it
  - B. Speak their minds and talks over others
  - C. Listen actively, honor commitments, and seek help when needed
  - D. Discuss personal issues with coworkers
- 2 Your emails should be generally:
  - A. Brief and to the point, but well-written
  - C. Riddled with errors

- B. Long and vague
- D. Passage
- When you get a personal phone call in a meeting, you:
  - A. Ignore it and call them back later
  - B. Excuse yourself and take it outside briefly
  - C. Answer and have a loud conversation.
  - D. None of the above
- 4 Unlike social etiquette, office and bussiness etiquette are primarly based on
  - A. Hierarchy and power
- B. Personal relation

C. Common sense

- D. Option A and C
- Your friend from college joins your company in a superior role to you. How should you interact with her in the office?
  - A. Talk informally and don't take her seriously
  - B. Show jealousy
  - C. Break friendship ties and maintain only professional relationship
  - D. Treat her like a superior in the office and as a friend outside
- 6 The key elements of presentation are:
  - A. Presenter
- B. The message and the medium
- C. Duration and time
- D. All of the above
- 7 Topic identification is level one requirement for a formal presentation
  - A. Yes
- B. No
- C. Maybe
- D. Both a and c
- 8 How many pumps does a proffesional handshake require?
  - A. 3

B. 4

C. 5

D. Two and a grab of the forearm

PTO

9 A text is more efficient than an email when letting someone know you are running behind.

A. True

B. False

C. Maybe

- D. None of the above
- Is the most important thing you must do before you leave a party? 10
  - A. Get business card from a new contact
  - B. Ask for a doggie bag
  - C. Say goodbye to the host
  - D. Both A and C
- 11 What does the outdated term "turning the table" mean?
  - A. Talk to the person on your left side during the first course, and rotate sides after each course
  - B. Move the table to be closer to the dessert buffet
  - C. Change seating throughout the course of a dinner party
  - D. None
- During an in-person conversation, what percent of your message is delievered through your spok 12 words?
  - A. 7%

B.38%

C. 55%

D. 43%

- When is the most gracious time to respond to an invitation? 13
  - A. Within 24 hours of receiving the invitation
  - B. Within one week of receiving the invitation
  - C. Anytime
  - D. Both A and C
- You can tell a lot about a person by their handshake. The double handshake, (where the person places their second hand on top of yours), is likely to be used by
  - A. Someone who tends to dominate in the meetings
  - B. Someone who is submissive
  - C. Someone who trusts you and wants you to frust them
  - D. None
- Eye contact is an important part of communication, and a lack of it can imply deception. To avoid staring 15 at somebody, how can you naturally strike a balance?
  - A. When breaking eye contact, look to the left or to the right
  - B. Look down at the floor every 30 seconds or so
  - C. Look just past the person
  - D. None
- When you stand up to talk in front of a group of people, what can you do to exude confidence? 16
  - A. Strike a wide stance
  - B. Try to position a desk or table between you and your audience
  - C. Clasp your hands in front of you
  - D. Both A and B
- Which of these signals suggest the person you are speaking to might not be telling the whole truth? 17
  - A. They make steady eye contact
  - B. They make frequent hand to face touches, including attempts to cover their mouth C. They answer you fairly promptly

    - D. Both A and C
- You need to ask some tough questions about your team's performance, and you notice that your team 18 leader's leg is shaking. Does that suggest?
  - A. He's feeling bored by the conversation
  - B. He's feeling jittery about your line of questioning
  - C. He is exuding confidence
  - D. None
- 19 While addressing a senior member of your team about staffing changes, she suddenly crosses her arms.

	Do you take that to mean?  A. She suddenly feels cold  B. She's not sure what to do with her hands  C. She is feeling defenseless, and is trying to shut out what is being proposed
	D. None
20	Using your hands while you talk can communicate a range of meanings, from enthusiasm and passion, to a lack of control. What would calm rounded hand gestures say to you?  A. "i'm open and clear"  B. "i think i'm in trouble"
	C. "i'm feeling over the moon"
21	D. None
21	Listening means to respond to advice or request
22	A. True B. False C. Maybe D. None Which of these is not a step in the listening process?
	A. To stop talking C. Misinterpreting D. Responding
23	Which of these is the first step in the listening process?
	A. Stop talking B. Receiving C. Interpreting D. Responding
24	Which of these is the third step in the listening process?
	A. Stop talking B. Interpreting C. Responding D. Receiving
25	Is the last step of the listening process.
	A. Receiving C. Responding B. Interpreting D. Stop talking
26	Hearing means perceiving with ears.
	A. True B. False C. Maybe D. None
27	Which of these is not a type of listening?
	A. Appreciative listening C. Focused listening D. Musical listening
28	Which of these types of listening lacks depth?
	A. Appreciative listening  C. Focused listening  D. Evaluative listening
29	In which of these types of listening, does the listener feel grateful?
	A. Superficial listening  B. Attentive listening  C. Appreciative listening  D. Evaluative listening
30	Which of these types of listening is followed by skilled listeners?
	A. Focused listening B. Evaluative listening
17.14	C. Attentive listening  D. Empathetic listening
31 🐧	In which of these, the listener puts himself in place of the speaker?  A. Focused listening  B. Evaluative listening  C. Attentive listening  D. Empathetic listening
32	Body language can make or break a speech
	A. True B. False C. Maybe D. None
33	Which of these is the study and classification of speech sounds?
	A. Gestures B. Speech style
	C. Phonetics D. Spoof PTO
	110

34 Which of these is not an element of the speaking technique?

	A. Voice quality C. Appearance	B. Word stress D. Correct tones		
35	Which of these means g	giving emphasis to a syll	able	
	A. Voice quality C. Tone	B. Word stress D. Message		
36	Which of these factors	is not involved in the det	termination of co	rrect tone?
	A. Pitch C. Quality	B. Dressing style D. Strength		
37	Which of these is not a	type of tone?		
: : >	A. Urgent tone C. Restrained tone	B. Serious tone D. Jumping tone		W.
38	Which of these tones re	present thoughtfulness?	<b>.</b>	
	A. Serious tone C. Happy tone	B. Urgent tone D. Outraged to		
39	Which of these tones is	an unemotional tone?		
	A. Happy tone C. Restrained tone	B. Outraged to D. Humorous t		NV.
40	Tone is used w	hen speaker wants to bri	ng about a good	impression of her life.
	A. Outraged C. Restrained	B. Reflective D. Urgent		
41	On is used in speaking	of things in motion.	: Pro-si- strategy	
42	A. True B. Fals Fill in the blank. The de		ybe O	D. None
	A. On B. Upo		O D. Ove	म
43	Till is used for time.		<b>₹</b> 5	-
	A. True B. Fals	e C. Ma	ybe	D. None
44	Which of these comes i	mmediately after the no	un?	
	A. Adverb phrase C. Verb phrase	B. Adjective p	hrase	
45	Which of these stateme	A .		
46	Every statement must h	ave a subject and a	<del></del>	
47	A. Noun Choose the correct state	B. Verb ement.	C. Predicate	D. Phrase
Town of the state	A. Do not make friend B. Do not make friends C. Do not make friends D. Do not make friendl	hip with selfish people. with selfish people.		
48	B. She doesn't know th C. She doesn't know th	ement.  The reason for his disappe  The reason of his disappear  The reason at his disappear  The reason with his disappear  The reason with his disappear  The reason with his disappear	rance. rance.	
49	Some students areA. Adapt	at copying.  B. Adept	C. Adopt	D. Edept

Father \_\_\_\_\_ me not to go out in the cold.

50

	A. Advised	B. Advised	C. Advice	D. Advise
51	Fill in the blank. I adv	ised her drink it.		
	A. Don't	B. Not to	C. To not	D. To don't
52	Choose the correct state	tement.		
	A. He obtained passing C. He obtained passed	-	e obtained pass marks. Le obtained passing mark.	
53	Choose the correct state	tement.		
	A. Anil talks french w C. Anil speaks french		nil chats french well. Inil talk french well.	:
54	Choose the correct star A. The ship was drown C. The ship sank.		B. The ship drowned. D. The ship had sank	QNII.
55	Choose the correct star			
	A. It is they who has to B. It is they who have C. It is them who has to D. It is them who have	to leave this place. to leave this place.		V.30
56	Fill in the blank. Offerings made upon t A. Altar	he B. Alter	C. Altar	D. Alter
57	Which of the following	g statements is incorrec	312 M	
	B. A letter must be con	itten in legible handwri		
58	Which of these is an e	xample of courteous lea	ave taking?	
	A. Yours sincerely C. Yours sincerely	B. Yours sin D. Sincerely		
59	_	ature of the writer be p	laced?	
	A. Above the courteou B. Below the courteou C. Next to the courteou D. On the envelope	s leave taking		
60	- M 3	n endorsed on the enve	=	
	A. Name B. Addres	s C. Name and addre	ss D. Name and date	
61	If 'air' is called 'green	ion, choose the correct ', 'green' is called 'red called 'pink', then wha	', 'red' is called 'sea', 'sea	a' is called 'blue', 'blue' is called
	A. Green C. Red	B. Air D. Pink		
62	According to new tern	ion, choose the correct ninology, 'aries' means '. What would an organ	'air', 'taurus' means 'ligh	nt', 'libra' means 'water' and
	A. Aries	B. Taurus	C. Libra	D. Scorpio
63	Choose the word which	h is least like the other	words in the group.	
	A. Grenade	B. Katana		
64	C. Shotgun Choose the word which	D. Rifle h is not similar to the o	ther words in the group.	РТО

.

	D. Tomato											
65	Solve the followi 1, 2, 3, 4, and 5 a All of them are si 3 is immediate rig Which of the foll A. 3, 4	re sittin tting in ght to 5	g in row b a row with and 4 is in tre at the e	ut not h their mmedia	necessa backs t ate left	rily in th oward n	hat orde orth.	r,		_		
66	In the following of If, in a language, 'five' and 'five' in Then what is the	'one' is s called	called 'tw 'six'.	vo', 'tv				ree' is c	alled 'fo	our', 'fou	ır' is calle	ed
	A. Three	]	B. Four	) ()	C. Five		D. Six			F 198		A CONTRACTOR
67	If 'dog' is called 'mongoose' is ca								'snake'	is called	mongoç	se',
	A. Lion I D. Mongoose	B. Bison	l	(	C. Snak	i.e				9	כל	
68	Choose the word A. Timor C. Rhodes	]	s least like B. India D. Borneo		ther wo	rds in th	e group		ĸO'	1, 10		
69	Choose the word				he othe	r words	in the g	oup.	**************************************			
	A. Bonnet C. Dashboard		B. Fender D. Hubca				8	A STATE OF THE PARTY OF THE PAR	•			
71	Five brothers are Tony is not adjace the middle in the Then, which pair A. Tony, dony C. Sony, mony Read the followin There are seven re	ent to b row. is at the	e extreme B. Dony, l D. Mony, mation to	ends? bony tony	ny is no	ven ques	stion.					
	Genie is to the rig Annie is on the rig Annie and donnie Earnie and bonni Donnie and fernie Who is on the im	ght of de ght of c have o have t have t mediate	onnie and onnie. ne monke wo monke wo monke	to the lay between between	left of t een the ween th ween th	oonnie. m. nem.			,		J	
	A. Donnie		B. Earnie			C. Geni			D. Fen			
<b>72</b>	If 'blue' means 's 'black' means 'w 'grey', then what	is the c	olor of hu	ms rec	ı, rea	means	punk,	'orange pink' m	ieans bi	own, t	is 'black' rown' m	, eans
	A. Black		B. Red			C. Whit	ı¢		D. Ora	nge		
73	In the following of The number/work						accordi	ng to the	e follow	ing letter	r codes:	
Nun		9	8	7	6	5	4	3	2	1	0	
Lette	er	Q	U	I	С	K	L	Y	R	О	D	
	13311728 A. OYYOOIRU C. OYYORIOU	<u> </u>			OIROU OUIRO		<b></b>	1			·	

In the following question, choose the correct code form.

The number/word group in the question is to be codified according to the following letter codes (use the

C. Spinach

A. Peas

B. Cabbage

## ADICHUNCHANAGIRI UNIVERSITY

18MAT21

## Second Semester BE Degree Examination October 2021 (CBCS Scheme)

Max Marks: 100 marks Time: 3 Hours

## Sub: Engineering Mathematics II

O P Code: 60012

Instructions: 1. Answer five full questions.

- 2. Choose one full question from each module.
- 3. Your answer should be specific to the questions asked.
- 4. Write the same question numbers as they appear in this question paper.
- 5. Write Legibly

## Module - 1

a Find the directional derivatives of  $\phi = x^2yz + 4xz^2$  at (1, -2, -1) along 2i - j - 2k6 marks 7 marks b If  $\vec{A} = xz^3i - 2x^2yzj + 2yz^4k$  find  $\nabla \times \vec{A}$  and  $\nabla \cdot (\nabla \times \vec{A})$ . 7 marks c Show that  $\vec{F} = (y + z)i + (z + x)j + (x + y)k$  is irrotational. Also find a scalar function  $\phi$  such that  $\vec{F} = \nabla \Phi$ 6 marks

a If  $\vec{F} = \nabla (xy^3z^2)$  find div $\vec{F}$  and curl $\vec{F}$  at the point (1) 1.1

7 marks

b If  $\vec{r} = xi + yj + zk$  and  $r = |\vec{r}|$  prove that  $\nabla (r^n) = nr^{n-2}\vec{r}$ .

Show that  $\vec{F}_1 = (x + y + az)i + (bx + 2y - z)j + (x + cy + 2z)k$  find a,b,c such that  $curl\vec{F} = \vec{0}$ .

7 marks

6 marks

7 marks

 $\mathbf{Module - 2}$ a Solve:  $6\frac{d^2y}{dx^2} + 17\frac{dy}{dx} + 12y = e^{-x}$ .
b Solve:  $\frac{d^2y}{dx^2} - 4\frac{dy}{dx} + 4y = e^{2x} + \cos 2x$ .
c Solve:  $(2x + 1)^2y'' - 6(2x + 1)y' + 16y = 8(2x + 1)^2$ .

7 marks

6 marks

Solve:  $\frac{d^2y}{dx^2} - 2\frac{dy}{dx} + y = xe^x$ . Solve by the method of variation of parameters  $y'' + y = \tan x$ .

7 marks 7 marks

Solve:  $x^2 \cdot \frac{d^2y}{dx^2} - x \frac{dy}{dx} + y = x^2 \log x$ .

## Module - 3

a Form the partial differential equation by eliminating the arbitrary functions 5  $\emptyset(x + y + z, x^2 + y^2 - z^2) = 0.$ 

6 marks

b Solve  $\frac{\partial^2 z}{\partial x \partial y} = \sin x$ . siny for which  $\frac{\partial z}{\partial y} = -2\sin y$  when x = 0 & z = 0 if y is an odd multiple of  $\frac{\pi}{2}$  or  $\left[z = 0 \text{ if } y = (2n + 1)\frac{\pi}{2}\right]$ 

7 marks

Derive an expression for one dimensional heat equation.

7 marks

**PTO** 

Form the PDE by eliminating the arbitrary function :  $z = e^{ax+by}f(ax - by)$ . 6

6 marks

Solve:  $\frac{\partial^2 z}{\partial v^2} = z$  given that when y = 0,  $z = e^x \& \frac{\partial z}{\partial y} = e^{-x}$ .

7 marks

Discuss the variable possible solution of one dimensional wave equation.

7 marks

#### Module - 4

Discuss the convergence of  $\sum_{n=1}^{\infty} (1 + \frac{1}{n})^{n^2}$  by using Cauchy's root test 7

6 marks

7 marks

Test the convergence of series using D'Alembert's ratio test
$$\frac{3}{4+1} + \frac{3^2}{4^2+1} + \frac{3^3}{4^3+1} + \frac{3^4}{4^4+1} + \cdots$$

Obtain the series solution of the equation  $\frac{d^2y}{dx^2} + y = 0$ .

7 marks

8 Discuss the convergence of  $\sum_{n=1}^{\infty} \left(\frac{n+1}{n}\right)^{n^2} \frac{1}{3^n}$  by using Cauchy's root test.

6 marks

7 marks

Prove that  $J_{\frac{1}{2}}(x) = \sqrt{\frac{2}{\pi x}} \sin x$ . If  $x^3 + 2x^2 - x + 1 = aP_0(x) + bP_1(x) + cP_2(x) + dP_3(x)$  find the values of a, b, c, d.

7 marks

## Module - 5

9 From the following table find the number of students who have obtained

6 marks

	narks.	
, Marks 30-40 40-50 50-60	60-70	7

	7. OI Students		L 42	21 <sub>5/6.</sub> [•
				* ".
Use Lagrange	's interpolation	on formu	ila to fin	d v(2)%. □
~ <del></del>	<del>-, -, -, -, -, -, -, -, -, -, -, -, -, -</del>			- 7 (~7. %)

7 marks

i	х	0	1	3	4
	у	-12	0	6	12

Evaluate  $\int_0^1 \frac{dx}{1+x^2}$  by using Simpson's  $1/3^{rd}$  rule taking four equal strips and hence deduce an approximate value of  $\pi$ .

7 marks

Fit an interpolating polynomial for the data.  $u_{10}=355, u_0=-5, u_8=-21, u_1=-14, u_4=-125$  by using Newton's divided difference formula. 10

6 marks

Obtain a real root of the equation  $x^3 - 2x - 5 = 0$ . Correct to three decimal places.

7 marks

Evaluate  $\int_0^6 3x^2 dx$ . Divide the [0,6] in to six equal parts by weddle's rule.

7 marks

## SUBJECT: BASIC ELECTRONIC ENGINEERING

## **Module: 1 Digital Fundamentals.**

1	Define number system? Mention its type and explain each with example.	
2	Explain how to convert decimal to binary and binary to decimal with suitable	
	examples.	
3	Explain how to convert hexadecimal to decimal and decimal to hexadecimal with	
	suitable examples.	
4	Convert the following.	
	i. $(128)_{10} \rightarrow (?)_2 \rightarrow (?)_8$	
	ii. $(111001101)_2 \rightarrow (?)_{10} \rightarrow (?)_{16}$	
	iii. $(FA876)_{16} \rightarrow (?)_2 \rightarrow (?)_{10}$	
	iv. $(3E.4FC)_{16} \rightarrow (?)_{10} \rightarrow (?)_2$	
	v. $(11001.011)_2 \rightarrow (?)_{10} \rightarrow (?)_2$	
	vi. $(555.40)_{10} = ($ $)_2 = ($ $)_{16}$	
	vii. $(1110101011001)_2 = ($ $)_{16} = ($ $)_{10}$	
5	Convert the Following:	
	i. $(00110111010.01011)_2=()_8=()_{10}=()_{16}$	
	ii. $(FBE.DC)_{16} = ()_{10} = ()_{8} = ()_{2}$	
	iii. $(510.67525)_{10} = ()2 = ()16 = ()8$	
6	Given $M = 11010110$ and $N = 01000101$ , Determine a) (M- N) b) (N-M) using	
	Binary 2s complement method.	
7	Perform the Subtraction using 1's complement method	
	i. $(11010)_2 - (10000)_2$	
	ii. $(11101)_2 - (11000)_2$	
	iii. $(1000100)_2 - (1010100)_2$	
8	Subtract using 2's complement	
	i. (111001) <sub>2</sub> from (101011) <sub>2</sub>	
	ii. (42) <sub>10</sub> - (68) <sub>10</sub>	
9	Solve using 2's compliment subtraction:	
	i. m=11001.0110, n=10110.1010; Solve (i) m – n, (ii)n- m	
10	ii. m=011101.01110,n =010111.10111; Solve (i)m–n, (ii)n-m	
10	Explain all the gates with symbol and truth table.	
11	Realize using only NAND gate. i. A+B	
	ii. A.B	
12	iii. A   B  Explain full adder circuit with gates and truth table	
	Explain full adder circuit with gates and truth table.  Pealize the full adder using two half adder. Derive the expression for sum and	
13	Realize the full adder using two half adder. Derive the expression for sum and	
14	Prove the following identities using truth table:	
14	(i) A.B=A+B	

	(ii) A. $(A+B) = A$
15	State and prove De-Morgan's theorem.
16	Simplify the following i) AB+ $\overline{A}$ C+ A $\overline{B}$ C (AB+C) ii) (A+ $\overline{B}$ ) (CD+E).
17	Discuss half adder with circuit diagram and truth table.
	For the expression $Y = \overline{A} B + A \overline{B}$
	i) Obtain the truth table
	ii) Realise the logic using AND, OR, NOT gates
	iii) Realise the logic using NAND gates only
18	Simplify the following Boolean expressions and draw the logic diagram using
	NOT, AND, OR gates for simplified expression and write the truth table.
	$i) Y = \overline{A} \overline{B} \overline{C} \overline{D} + \overline{A} \overline{B} \overline{C} D + A \overline{B} \overline{C} \overline{D} + A \overline{B} \overline{C} D$
	ii) Y= $\overline{A} + B + \overline{CD}$

## **Module 2: Semiconductor Diode and its application**

1	
	Define PN junction diode. Explain the construction of PN junction diode.
2	Explain the characteristic curve of PN junction diode.
3	Explain the operation of PN junction diode under for forward and reverse biased
	condition.
4	Define rectifier. Sketch a half wave rectifier with wave forms and derive the
	following
	i. Average voltage
	ii. Average current
	iii. Efficiency
	iv. Ripple factors
5	Explain the operation of half wave rectifier with neat circuit diagram and wave
	form.
6	Show that the ripple factor of a half wave rectifier is 1.12 and efficiency is
	40.5%.
7	In an HWR, the 2° voltage of transformer is 80V, if the value of load resistance is
	20Ω. Calculate a) DC voltage b) PIV c) DC current d) Power delivered to the
	load e) Rectification efficiency.
8	Explain the operation of full wave rectifier with capacitor filter with neat circuit
	diagram and wave form.
9	Illustrate the operation of a full wave rectifier circuit with center tap transformer.
	Sketch the input and output waveforms.
10	Explain with neat circuit diagram and waveform the working of center tap full
	wave rectifier. Show that efficiency of full wave rectifier is 81%.(R)
11	Derive the following for full wave rectifier.

i. Average voltage ii. Average current iii. Efficiency iv. Ripple factors Explain the operation of full wave rectifier with capacitor filter with neat circuit 12 diagram and wave form. In an HWR, the 2° voltage of transformer is 80V, if the value of load resistance is 13 20Ω. Calculate a) DC voltage b) PIV c) DC current d) Power delivered to the load e) Rectification efficiency. Explain how zener diode helps in voltage regulation with neat circuit diagram. 14 What is zener diode? With neat circuit diagram explain the operation of voltage 15 regulator. Determine the range of Vi in which the Zener diode of below figure conducts 16 RL 220 Ω Vz=20V; Pz(max)=1200mW

## **Module 3: Transistors and its applications**

1	Define transistor. Explain the structure of transistor with symbol
2	Describe in detail the working principle of a PNP bipolar junction transistor.
3	Describe in detail the working principle of a NPN bipolar junction transistor. Why is it called Bipolar?
4	Draw and explain the input and output characteristics of n-p-n silicon transistor in CE configuration. Indicate cut off, saturation and active regions.
5	Describe DC Load line and Operating point of a transistor with neat sketch.
6	With neat circuit diagram, explain in detail transistor as amplifier and switch.
7	Explain the Construction of p-Channel JFET with neat diagram.
8	Explain the Construction of p-Channel JFET with neat diagram.
9	Explain the drain characteristics curve and transfer characteristic curve of an n-channel JFET.

channel JFET  Explain the construction of n-channel depletion type MOSFET with neat diagram.  Explain the construction of p-channel depletion type MOSFET with neat diagram.  Explain the operation of n-channel depletion type MOSFET with drain characteristics curve and transfer characteristic curve.  Explain the operation of p-channel depletion type MOSFET with drain characteristics curve and transfer characteristic curve  Explain the construction of n-channel enhancement type MOSFET with neat diagram.  Explain the construction of p-channel enhancement type MOSFET with neat diagram.  Explain the operation of n-channel enhancement type MOSFET with drain characteristics curve and transfer characteristic curve.  Explain the operation of p-channel enhancement type MOSFET with drain characteristics curve and transfer characteristic curve.  List the difference between Depletion-MOSFET and Enhancement-MOSFET.	1 - 1	Explain the drain characteristics curve and transfer characteristic curve of an p-
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00 E 11 4 4 4 4 1 1 4 600D 14 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	20	
20 Explain the construction and operation of SCR with neat circuit diagram and VI	20	
characteristics.		characteristics.
21 Explain the two transistor model of SCR		
21 Explain the two transistor inoder of SCK.	21	Fixalian the two transictor model of SCP
22 Explain the switching action of SCR.	21	Explain the two transistor model of SCR.
		Explain the two transistor model of SCR.  Explain the switching action of SCR.

## **Module 4: Operational Amplifier and Oscillators.**

1	List the characteristics of ideal Op-Amp.
2	List the ideal characteristics of Operational Amplifier and explain any two.
3	Define the following term with respect to op-amp.
	i. CMRR ii. Slewrate iii. PSRR iv. Offset voltage
4	Explain the block diagram of Operation Amplifier.
5	Explain the concepts of virtual ground of op-amp with neat circuit diagram.
6	Derive the expression for output voltage and gain for inverting Amplifier with
	neat circuit diagram.

7	Derive the expression for output voltage and gain for non-inverting Amplifier
	with neat circuit diagram.
8	Explain voltage follower with neat circuit expression and waveform.
9	Explain the Application of Op-Amp as an Integrator & Voltage follower.
10	Explain the Inverting summing Amplifier and Derive the equation for output
	voltage and gain.
11	Explain the non-inverting summing Amplifier and Derive the equation for output
	voltage and gain.
12	Explain the Application of Op-Amp as a Differentiator with suitable equations.
13	Explain the Application of Op-Amp as a integrator with suitable equations.
14	Explain op-amp as a subtractor with neat circuit diagram.
15	Find the Vo for the circuit given
	10 kΩ A V <sub>0</sub> V <sub>0</sub> V <sub>0</sub>
16	Find the output voltage and gain for inverting amplifier if Vin=10V, $R_f$ =57K $\Omega$
	and R1= $10$ K $\Omega$ .
17	Explain RC phase shift oscillator with circuit diagram and necessary equations.
18	State and explain the Barkhausen's criteria for oscillator.
19	With a neat circuit diagram explain the working of Wein bridge oscillator.
20	Define an oscillator. Derive the equation for Wein bridge oscillator

## **Module 5: Communication System**

1	With neat block Diagram explain the basic communication system.
2	Define Amplitude modulation with waveform and expression.
3	Explain the need for modulation
4	Define modulation index for AM. Sketch AM wave for m>1 and m=1.
5	Derive the modulation index of AM in terms of $V_{\text{max}}$ and $V_{\text{min}}$ with neat
	waveform.
6	Define Frequency modulation with waveform and expression.
7	What are the difference between AM and FM
8	Explain principle of operation of Mobile communication.
9	With neat block diagram explain cellular transmitter system.
10	With neat block diagram explain cellular transmitter system.
11	With neat block diagram explain microwave communication system
12	With neat block diagram explain the fiber optic communication system.

# Unil-2 DC Motor

Prof. Shwetherk (1) pept of ECE BGIIT, B.G. Nagara.

Working:

- \* The field winding is on the stator & the armeture winding is on the dotor.
  - through the carbon brushes, Commentator Regments & armsture conductors placed on periphery of Rotol.
  - \* The current in these armature conductor of dotos produces their own magnetic field which interacts with the magnetic field of field windings & hence Experience a mechanical yorce.
  - \* There twisting and tangential forcer constitute a "Toque" which rotates the costor.
  - \* Toaque: The twisting force that makes the object to lotate.

Back Eng! -

to In the AC motor due to motoring action the almeture starts dotating & the armsture conductors cut the main flux of field winding hence according to faradaye how, an end is induced in the opposite dialetion to the kupply voltage according to Ferg ? from.

& Thus like a DC generator, dc motor too has in the armsture with the same Egg jus besubic EP= Obns ; ANT

. Back en un a DC motos

Ta Tipply
(Eb) rollings(v)

i. The supply voltage 'V' for the BC motor in given by V= IaRat Eb+Vb; volts

\* Brush drop in practically neglected

JaRa = V-Eb

201017

 $I_a = \frac{V - E_b}{R_a} : A$ 

lignificance of Back Enj:

\* The presence of back Enf of the Dc motor acts as a degulating machine.
i.e., motor adjusts itself to draw the almetiste current first Enough to satisfy the Load demand.

\* For a given machine A, Z, pale fixed (constant)

i.e.,  $E_b = \frac{\phi P N \neq}{60A}$ But  $K = \neq$ 

But K = Zp 60A

Eb= PNK; volt.

(EPYN)

i.c., back emp is didelly proportional to speed.

\*(i) When load in Ruddenly applied to the motor it tries to slow down, so speed of the motor deduces, hence back on also decreases.

Net voltage across armature (V-fb) increases &:

motor draws more armeture current.

Due to increase in armoture current, force (3) Experienced by the conductors & the torque on the armodure cincrealed

\*(ii) When the Load on motor is decreased, Speed of the motor increases & hence back emp increases, this deduces amature current & the torque.

\* Hence back inf degulates the flow of armature current is automatically afters the current Ia and torque to changes in the load. This is the practical lignificance of back enf. \* At the starting of motor the speed in zero and hence back Emp in zero).

Todane Equation of Ac motor: W.K.T the voltage Equation of a D.C. motor in V=Eb+IaRa -> 1

multiply by Ja on B.s to get power Egn VIa= EbIa+Ia-Ra->0

VIa = Total Electrical power supplied to the Ia Ra = depresents the Lork due to armature desistance. EbIa = depresents the Electrical power that is converts to mechanical power by the amature · · < Pm = Eb Ia> -> 3

A. W. Carlot

\* W.K.T the twisting force about an axis is call ". consider a wheel of ladius 'a' acted upon by a circumferential force 'F' newtons as shown below. Distation : The angular speed in given by W= 2TTN rad/Roc -> (4) Workdone in one devolution is w= force Xdistance travelled. w= FX2TIQ ->(5) .. Mechanical power developed = Workdone = £ 21718 Pm = (EXQ) 211N ->6 Pm = Ta · 2TIN ; watts where To is the torque in newton meters Excerted in the armsture to derelop the mechanical power : Equate Egn (3) and (7) EbIa = Ta : 2TTN -> 8 W.K.T Eb = \$NZP -> substitute in 8 GOA Ta= Ta 2 TING

$$\frac{1}{2} \cdot \left\{ \frac{Ta}{2\pi A} = \frac{\phi \neq p}{2\pi A} \cdot Ta \right\} Nm$$

# For a given machine Z, P, A are fixed

:. { Ta & \$ Ia }

i.e., Todque developed in proportional to the product of armature current 'Ia' & flux per pole.

Note: - All the torque dereloped by the almature in not available at the shaft, due to fliction loss at bealing & brusher.

! The torque at the shaft is

Tsh > torque at shaft

Ta > Amature shaft

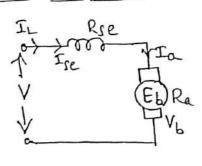
T4> Torque Lost

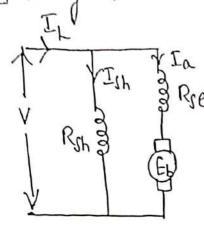
Types of Dc motors:-

Depending on the way in which the field windings are corrected to the almature, D. C. motors are clarified into 3 types

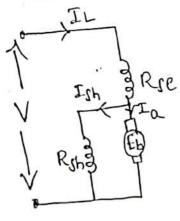
- 1) Ac shunt motor
- (2) AC Resier motor
- 3 BC compained motor

(2) Ac helier notol:





# b) short shurt Ac motor



LES IL = Ia + Ish

Ia = IL - Ish

where Ish = V-ILRse

Rsh

V=ILRse + IaRa + Eb + Vb

nugle ct Vb.

Eb = V-ILRse - IaRa.

\* There are 3 important characteristics of DC motors.

\* There characters are studied keeping the applied voltage 'V' constant.

they are

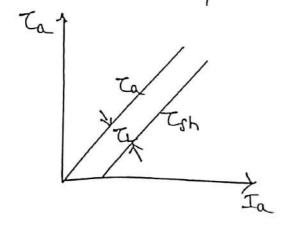
- 1) flectrical characteristic of Ta/Ia characteristic
- 2) speed to current (0) N/Ia characteristic
- 3) Mechanical (or) N/Za characteristic.

characteristics of BC short motors:-

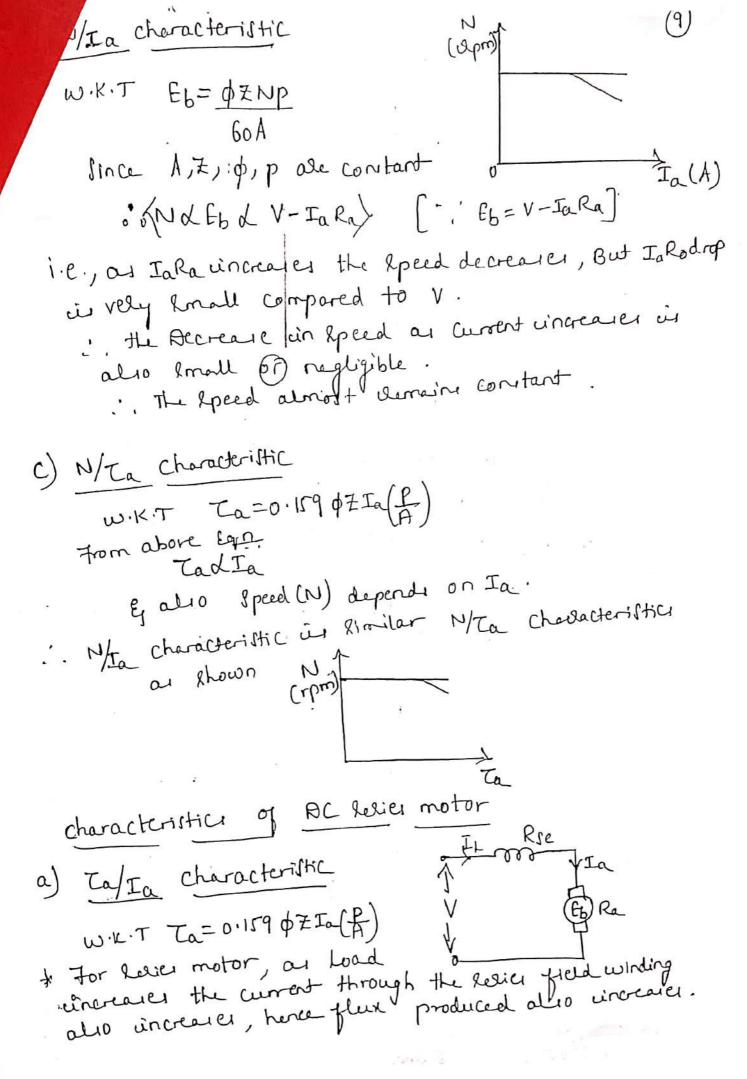
a) Ta/Ia Characteristic

since the applied Vtg 'V' remains I would be constant, the field current Ish a lemains constant correspective of the Load. Hence flux produced also remains constant.

i.e., in this Eq. 7. 7, P, A & p ale constants
... (TaxIa)

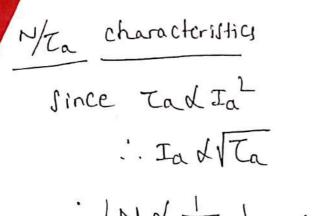


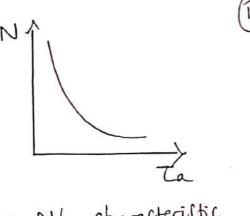
Since the shaft torque is always less than almature tought. Due to Lokes [iron & friction] uit is Less than Ta as shown in fig.



· · TadpIa But pLIa : < Tax Jal> Hence the valiation of Ta wirit Ia is as shown. b) N/Ia charaderistic W.K.T Eb= \$ZNP GOA i. N& Eb & V-I (Ratrie) i.e., as the Load on the motor increases, a) Ia (Rathse) vincreaves & honce liped decreaves. b) flux & also cincreases due to which the speed Where the first factor is regligible as the IaR drop is very less. decreases. . . According to Record factor y pala.

... Nd I i.e., speed is inversely proportional to flux and current Ia.





i. \N & Ta > From N/Ia characteristic

# problem:

(1) A! 4 pole BC Shurt motor takes 224 from 2200 Rupply. The almature & field desistance are despectively outr and took despectively. The almeture is lap corrected with 300 conductors. If the flux per pole is domain with 300 conductors. If the flux per pole is domain. Calculate the speed and gross torque.

a) w.K.T

$$E_b = \frac{\phi PNZ}{60 A}$$

$$\phi = 20 \text{ m wb}$$

=0.159 x20 x10-3 x19.8 x300 x4

At 190 shunt motor takes an armsture current of 110 at 480V. The almsture desistance is 0.201. The machine of 6 poles by armsture is her connected with 864 has 6 poles by armsture is per pole is 0.05 wb. calculate conductors. The flux per pole is 0.05 wb. calculate (i) speed (ii) Toggie developed by the armsture.

Ia= 110 A (i) Eb= PNZ N = 480N Ra=0.2N N= Eb 60 A p = 6pp≠ 7=864 < N = 428 x 60 x 6 = 636. sbm > \$=0.02mp N= ; Ta=1 Eb = V-JaRa for lap = 480-(110x0.2) A= P=6 LEB = 458V>

> (ii)  $\tau_{\alpha} = 0.159 \phi I_{\alpha} Z\left(\frac{P}{A}\right)$ = 0.159 x 0.05 x 110 x 864  $\left(\frac{6}{6}\right)$

(Ta = 755.57 Nm)

3) A 500V Shurt motor has 4 poles and a ware connected winding with 492 conductors. The flux per pole is 0.05 wb, the full load current is 20 tmps. The almature & shurt field desistances 0.12 & 2502 despectively. Calculate the speed & the developed torque.

Colourst 17 J Sol V=500V Ra=0.11 Eb= $\frac{60}{60}$  Eb= $\frac{1}{60}$  Eb= $\frac{1}{9}$ 8.2 V P= $\frac{1}{7}$  Rsh= $\frac{1}{60}$ 8 rpm  $\frac{1}{7}$  Ia= $\frac{1}{7}$ 1.5 In= $\frac{1}{7}$ 1.5 In= $\frac{1}{7}$ 2.4 Is a self-order of the self-order of N= 500N

6=4

7=800

Ra=0.55

RJh = 200s.

IL = UA

\$ = 30 m wb

いこう

Ta= ?

A=p(Lap)

Eb=gpNZ

M= EP X 60XY \$PZ

(N=475 rpm)

Eb= V-IaRa

Eb=190V

In=IL-Ish

Ia = 20 A

 $I_{Jh} = \frac{V}{R_{Jh}} = 1A$ 

Ta = 0.159 \$ Ia = (P)

< Ta = 76.32 Nm>

5) A 4 pole DC Thurst motor takes 22.5A from a 2500 hupply.
The armsture desistance in o.5 n & shurst field desistance in ware wound with 300 conductors.
in 1250. The almsture is ware wound with 300 conductors. If the flux | pole is 0.02 wbs. columbte (i) ! peed (ii) Togue dereloped and (iii) power developed.

P=4 IL= 22.5A

V = 520A Ra=0.50

RJh=1250

7=300

\$ = 0.02 wb

M = 3

Ta=?

 $N = \frac{E_b \times 60 \times A}{\phi p_{\overline{A}}}$   $A = 2 \left( \frac{\omega_{out}}{\omega_{out}} \right)$ 

2 N=1199 rpm)

Ta= 0.159 \$ Ia= (f)

2 Ta=39.114 Nm>

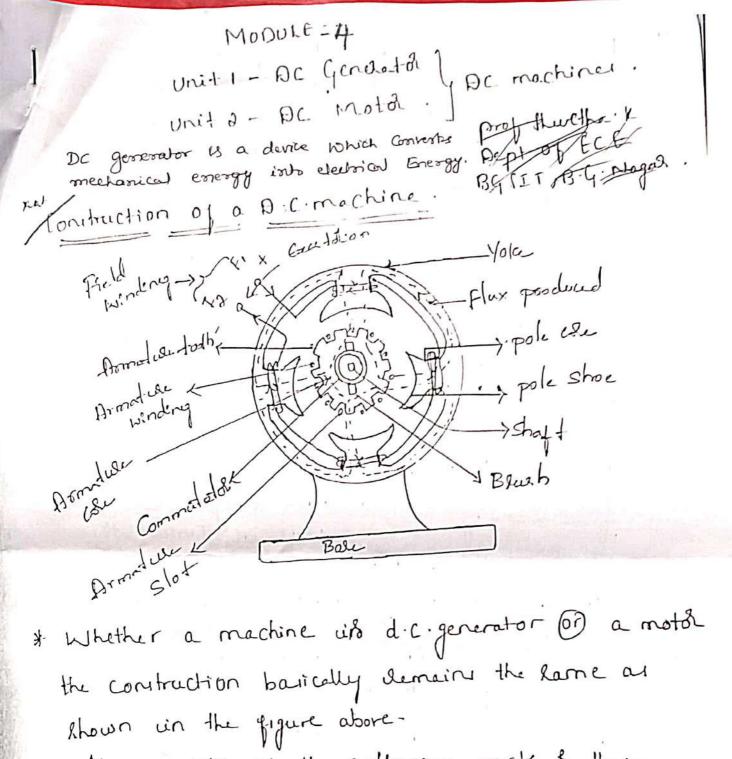
fb=V-IaRa

6P=931.42 N

Ia= IL-Ish

Ia=20.5A

 $I_{Sh} = \frac{V}{R_{Sh}} = 2A$ 



It consists of the following parts & their functions are:

Ro that the cinner mederials get protected from harmful admospheric Elements like moisture, dust Etc.,

It is made up of cast islon for healt machines and of silicon steel for Large machines.

in It acts as a protective cover for the whole machine

(11) It also provide a path for the magnetic flux.

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poler: - Each pole has two ports 1.e., (1) pole core & (ii) pole shoe.

\* pole core carrier à field winding which is necessary to produce the fleek & it directs the flux produced through airgap to armoture cole.

- core

\* pole shoe Enlarges the area of armsture core to Link with flux, Po; that larger unduced confin achiered.

Iteel with Laminations.

(C) field winding (F1-F2) # The field windings are wound on the pole core with definite direction, when current flows through their filld windings, it behaves as an electromagnet, thus

producing the flux. \* The filld winding is made up of aluminium 60

Copper & Their field winding in divided into colle called field coiler.

(d) Moneture: - The armeture has two parts namely 1) Armature core 1) Amature windings

of Armature core: - It is cylindrical in shape mounted on the shaft. It consists of slots on the outer paiphely to accomodate armature conductor & the airducts to permit the air flow though almature which leaves cooling purpose. of the core is made up of Lamination to reduce Eddy wirrend Loss.

mature windings: - There windings are nothing but the armature conductor placed on the slots of the almature cone.

of When the almature is dotated, the magnetic flux get cut by almature conductor & enj gets induced in them in case of generator.

# In care of A.C. motor, It carrier airent i.e., supplied by the Rource:

It the windings are made up of good conductor i.e., copper.

# () Commutator

& the basic nature of Enj induced in the almeture conductor is alternating which need dectification for the case of A.C. generator, this is achieved by using a device called

\* It converts developed afternating emp to unidirection
- at emp (dc emp)

\* The material used is copper,

Brushes (or) Brush gear: -\* It is placed on the Restace of commutator. # It collects current from commentator and makes ait available to the Stationaly External circuit. & It is made up of Roft material like carbon.

Bealings! - For knooth dotation the bealings are used. For heavy duty machines, coller bearings The no of conductors are connected together in a specific manner, to form a winding called as almature winding of a dc machine.

The conductors placed on the armature are dotated with the help of Rome External device called as prime movers.

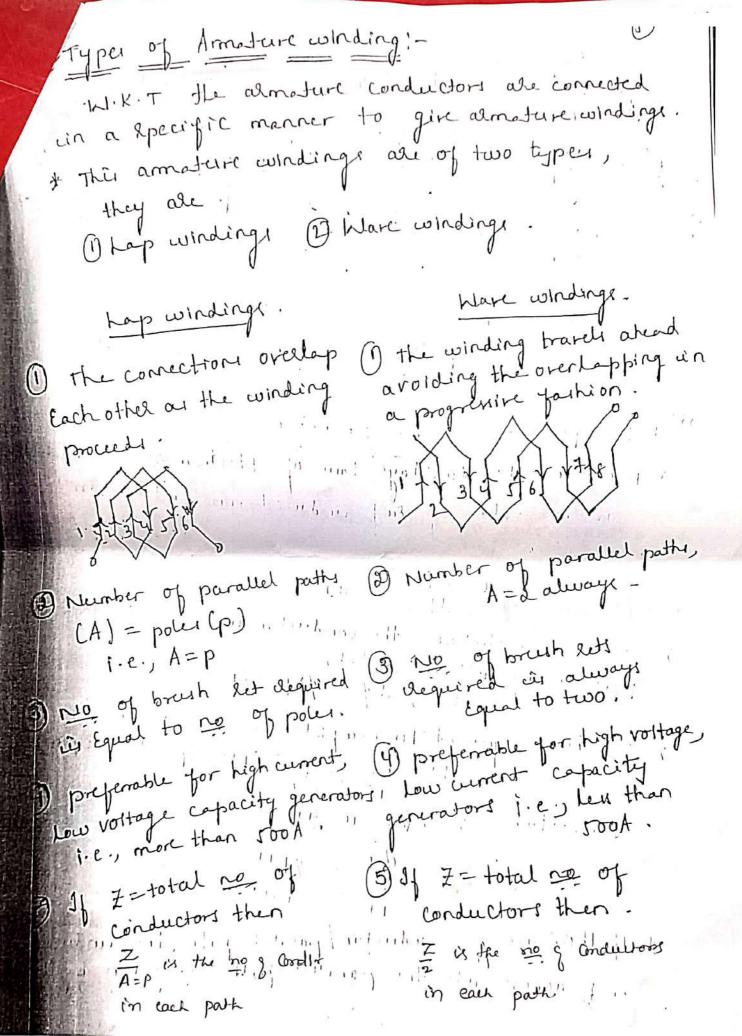
\* The magnetic of line is produced by current collegeing windings which are called as yield windings. I there your Lines with the dotating conductor by due to charge in flux an end is induced. A/c to to charge in flux on long is induced end the principle of dynamically induced end L'e = BLV sino-volts.

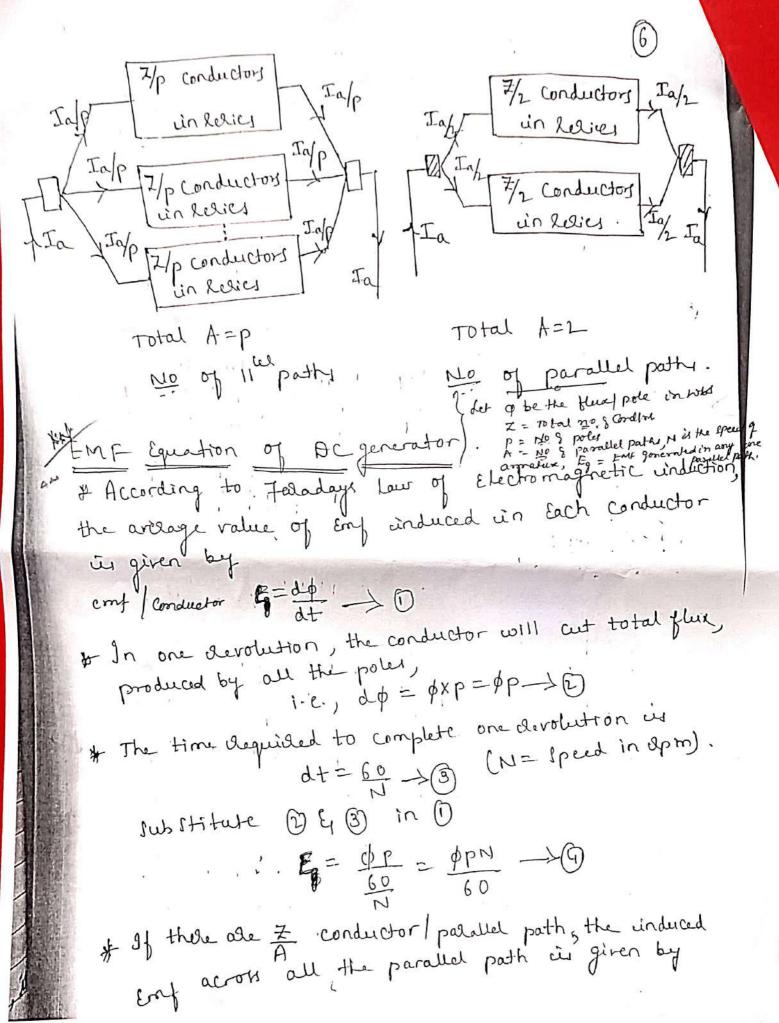
According to above egn the nature of unduced enf il purely financidal 1.e., alternating un nature

\* TO have D.C. voltage a device called commutator is used to convert the alternating Eng to unidirectional Eng.

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the second secon





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problem :- .

(1) A 4 poli, 1500 apm de generator hou a lap wourd nametiche having by Hott with 10 conductorals 10 E If the your per poll is 0.04 wb, calculate the irr f generated in the almitice. What would be the greatest Emf, if the winding is ware convicted?

P=4

$$P=Y$$
 $P=Y$ 
 $Z=SU+IX conductor/Slet$ 
 $Z=SU+IX conductor/Slet$ 
 $Z=SU+IX conductor/Slet$ 
 $Z=SU+IX conductor/Slet$ 
 $Z=SU+IX conductor/Slet$ 
 $Z=SU+IX conductor/Slet$ 

For word
$$A = 5$$

$$E = \frac{d p N^{2}}{60 \Lambda} = \frac{0.04(4)(1700)(1.40)}{60 \times 3}$$

$$= 450 \text{ V}$$

(3) A 4 pole generator with ware wound as materia has
It slots each having sy conductors. The effect per pole
in 0.01 wb. At what speed must the as material dotate
to give an induced Emp of 22001 What will be the
voltage developed up the winding in Lap and the
voltage developed up the winding in Lap and the
amater is stated at the lame. Speed.

For L-p:- $F = \frac{\phi PN \neq}{60 \times P}$  A = P = 4 C = 110 V

(3) An 8-pole, Lap-connected almatice has 40 slots with 12 conductors per 8lot, generates a voltage of 500V. Determine the speed at which cities durning. If the flue per pole is 50m wb.

N=1 V=1 V=1

#### First Semester BE Examination July 2021

18ELE13/23

#### (CBCS Scheme)

Time: 3 Hours Max Marks: 100 marks

### **Sub: Basic Electrical Engineering**

Q P Code: 60004/60014

**Instructions:** 1. Answer **five full** questions.

- 2. Choose one full question from each module
- 3. Your answer should be specific to the questions asked.
- 4. write the same question numbers as they appear in this question paper.
- 5. Write Legibly

Module - 1 1 a State and explain Ohm's law and mention its limitations. 6 marks b Derive an expression for the equivalent resistance of three resistors which are 8 marks connected in series and also explain the characteristics of series circuits. A 8 ohm resistor is in series with a parallel combination of two resistors 12 ohm and 6 marks 6 ohm. If the current in the 6 ohm resistor is 5A.determine the total power dissipated in the circuit. OR a State and explain the Kirchhoff's laws with an example 2 7 marks b Define RMS value of alternating current, show that its value is proportional to 7 marks maximum value. c Define the following with respect to sinusoidal alternating quantity: (i) Average 6 marks Value, (ii) Form factor and, (iii) peak factor Module – 2 a Show that in a pure inductor the current lag behind the voltage by 90°. Also draw the 3 6 marks voltage and current waveforms. A 230 V, 50 Hz ac supply is applied to a coil of 0.06H inductance and  $2.5\Omega$ 7 marks resistance connected in series with a 6.8µF capacitor. Calculate (i) Impedance (ii) Current (iii) Phase angle between current and voltage (iv) power factor (v) power consumed Obtain the relationship between line and phase voltages and currents in three phase 7 marks balanced delta connected system

#### Or

- 4 a List out the advantages of three phase system as compared to single phase system 6 marks
  - b Show that two wattmeter's measure three phase power with suitable circuit diagram 8 marks and vector diagrams.
  - c A coil of resistance 10, and inductance 1.013 H, is connected in series with a 10  $\mu$  F 6 marks capacitor. Calculate (a) the resonant frequency, (b) the circuit current, when connected to a 240 V, 50 Hz supply, and (c) the P.D. developed across the capacitor

#### Module – 3

5 a Explain the working principle of transformer.

6 marks

List different types of loss in transformer and explain each one in brief. 8 marks A 250KVA, 11000/415V,50Hz single phase transformer has 80 turns on secondary. 6 marks Calculate. (i)The rated primary and secondary currents (ii)The number of primary turns (iii)The maximum value of flux (iv)Voltage induced per turn Or What is earthing? Why earthing is required? With the help of sketch 8 marks 6 Explain plate earthing. With a neat sketch and truth table explain 2 way and 3 way control of lamp. 8 marks What are the Precautions against electric shock? 4 marks Module – 4 7 Explain the working principle of D.C motor with suitable diagrams. 6 marks Derive an EMF equation for D.C generator with usual notations 6 marks A shunt generator delivers 195A at terminal voltage of 250V. The armature resistance 8 marks and shunt field resistance are  $0.02\Omega$  and  $50\Omega$  respectively. The iron and friction losses equal 950W. Find (i) E.M.F generated (ii) Cu losses (iii) output of the prime motor (iv) commercial, mechanical and electrical efficiencies. a Discuss the following characteristics for i) series motor ii) shunt motor with relevant 8 marks 8 plots. i) Ta v/s Ia ii) N v/s Ia b Explain the function of following parts of D.C machine. 6 marks ii) Field winding i) Yoke iii) Commutator iv) Pole shoe v) Pole core vi) Brush A 500V shunt motor has 4 poles and a wave connected winding with 492 conductors. 6 marks The flux per pole is 0.05Wb.the full load current is 20 Amps. The armature and shunt field resistances  $0.1\Omega$  and  $250\Omega$  respectively. Calculate the speed and the developed torque. Module – 5 Explain the working principle of 3 phase synchronous generator. 9 6 marks Derive an EMF equation for alternator with suitable considerations 8 marks A 3-phase, 12-pole alternator is coupled to an engine running at 500rpm. The 6 marks alternator supplies an induction motor which has a full-load speed of 1455rpm.find the slip and number of poles of the motor Or Describe the constructional features of 3 phase induction motor with suitable 10 8 marks diagrams With a circuit diagram explain the working of a star delta starter for a three phase 7 marks induction motor A 3 phase, 6 pole, star connected alternator has 48 slots and 12 conductors per slot on 5 marks the armature. If the rotor at 1200rpm and Flux per pole is 0.3Wb. The winding factor and pitch factor is 0.95. Calculate the phase e.m.f and line e.m.f.

#### ADICHUNCHANAGIRI UNIVERSITY 18ELN13/23

#### First Semester BE Examination July 2021

#### (CBCS Scheme)

Time: 3 Hours Max Marks: 100 marks

**Sub: Basic Electronics** 

Q P Code: 60008/60017

**Instructions:** 1. Answer **five full** questions.

- 2. Choose one full question from each module
- 3. Your answer should be specific to the questions asked.
- 4. write the same question numbers as they appear in this question paper.
- 5. Write Legibly

#### Module - 1

- 1 a Explain the operation of PN junction diode under forward and reverse bias 7 marks conditions with the help of V-I characteristics curve.
  - b What is Zener diode? With neat circuit diagrams, explain the operation of a voltage 7 marks regulator with and without load.
  - c A diode with VF = 0.7V is connected as a half wave rectifier, the load resistance is  $600\Omega$  and AC input is 24V(r m s). Determine (i) output voltage (ii) load current and (iii) diode peak inverse voltage.

#### OR

- 2 a With a neat circuit diagram, explain the working of a two diode (centre-tapped) full-wave rectifier along with relevant waveforms.
  - b Write a note on: (i) Photodiode (ii) LED

8 marks

c Distinguish between Zener and Avalanche breakdown.

4 marks

#### Module – 2

3 a Explain the construction and working of N-channel JFET.

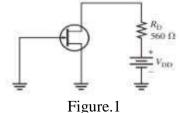
9 marks

b With a neat circuit diagram, explain the operation of a CMOS inverter.

7 marks

c For the JFET in Figure.1,  $V_{GS(off)=}.4V$  and  $I_{DSS}=12mA$ . Determine the minimum value of  $V_{DD}$  required to put the device in the constant-current region of operation when  $V_{GS}=0V$ .

4 marks



#### iguie.

#### Or

- 4 a With neat diagram, explain the construction and characteristics of an enhancement type 9 marks MOSFET.
  - b What is SCR? Explain the working of SCR using two-transistor model. 6 marks
  - c Explain phase control application of SCR.

#### 5 marks

#### Module - 3

5 a List and explain the characteristics of an ideal op-amp and mention the applications 8 marks of op-amp

b Refer to the op-amp in Figure.2. if  $v_i$ =0.5 V, calculate (a)the output voltage  $v_o$ , and 4 marks (b)the current in the  $10k\Omega$  resistor.

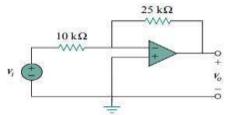


Figure.2

c Explain the operation of an op-amp as a non-inverting amplifier with neat diagram and waveforms. Derive the expression for output voltage.

#### Or

- 6 a Draw the three input inverting summer circuit and derive an expression for its output 8 marks voltage.
  - b With a neat circuit diagram, show how an op-amp can be used as an integrator. 8 marks Derive the expression for output voltage
  - c A certain op-amp has an open loop voltage gain of 1,00,000 and a common mode 4 marks gain of 0.2. Determine the CMRR and express it in decibels.

#### Module - 4

- 7 a With neat circuit diagram, explain how transistor is used as a voltage amplifier. 8 marks Derive an equation for voltage gain Av.
  - b Explain RC phase shift oscillator with circuit diagram and necessary equations. 8 marks
  - (a) Determine the value of  $R_f$  necessary for the circuit in Figure.3 to operate as an 4 marks oscillator.
    - (b)Determine the frequency of the oscillation.

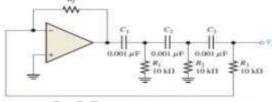


Figure.3

#### Or

8 a Explain the Barkhausens' criteria for oscillations

- 6 marks
- b With a neat circuit diagram, explain the working of Wien bridge oscillator.
- 8 marks

c Explain with circuit, a stable multivibrator using IC 555

6 marks

#### Module – 5

9 a State and prove De-Morgan's theorem.

- 6 marks
- b What are universal gates? Realize AND and OR gates using universal gates.
- 5 marks

c Convert the following

9 marks

- i.(1011.01)<sub>2</sub>=(?)<sub>10</sub> iii.(1073.32)<sub>8</sub>=(?)<sub>2</sub>
- ii.  $(A2B.1D)_{16}=(?)_{10}=(?)_2$
- $iv.(1000111011.01101)_2=(?)_8=(?)_{16}$

#### Or

- 10 a Design a full adder and implement it using two half adders and write the equations 8 marks for sum and carry.
  - b With the help of a logic diagram and truth table, explain the working of a clocked 6 marks SR flip-flop.
  - c With a neat block diagram, explain the elements of a communication system. 6 marks

#### 18EME15/25

08 marks

10 marks

10 marks

#### First/Second Semester BE Examination July 2021

#### (CBCS Scheme)

Time: 3 Hours Max Marks: 100 marks

#### **Sub: Elements of Mechanical Engineering**

Q P Code: 60010/60019

**Instructions:** 1. Answer **five full** questions.

2. Choose one full question from each module

Explain Cylindrical Grinding with a neat sketch

Define Brazing and explain its working principle

Distinguish between the welding and Brazing

6

b

- 3. Your answer should be specific to the questions asked.
- 4. write the same question numbers as they appear in this question paper.
- 5. Write Legibly

Module - 1 a Explain with a neat sketch working of Solar Power Plant 1 10 marks b Define any five steam properties 10 marks OR a Explain with a neat sketch working of Kaplan Turbines 2 10 marks Explain with a neat sketch working of Open cycle Gas Turbine 10 marks Module – 2 3 a Using PV diagram explain Diesel cycle 10 marks Following data are collected from a 4-stroke single cylinder oil engine at full load. 10 marks Bore=200 mm, stroke = 280 mm, speed = 300 rpm, indicated mean effective pressure = 5.6 bar, torque on the brake drum=250 Nm, oil consumed = 4.2 kg/h and calorific value of oil = 41 MJ/kg. Calculate mechanical efficiency, indicated thermal efficiency and brake thermal efficiency. 0r Define the following 10 marks 4 i. Refrigerating Effect ii. Ton of Refrigeration iii. Unit of Refrigeration iv. Coefficient of Performance v. Ice Making capacity Describe with a neat sketch the working of vapour Compression refrigerator. 10 marks Module - 3Explain the following operations with neat sketch 12 marks (ii) Counter Sinking Knurling (iii) Thread cutting

		N. T. 1. 1. 4	PTC
7	a	Module – 4 Explain any 5 advantages of gear drives over belt drives	10 marks
	b	Explain with a neat sketch working of Idler Pulley	10 marks
		Or	
8	a	Explain any 5 properties of a good lubricant	10 marks
	b	Explain Ball & Roller Bearings	10 marks
		Module – 5	
9	a	Differentiate between Ferrous and non-Ferrous metals	10 marks
	b	Define Engineering materials and explain the composition and applications of any	10 marks
		three types of steel  Or	
10	a	Broadly classify composite materials	10 marks
	b	What are the advantages and disadvantages of composite materials	10 marks
		J. 24.01.2021, 99.3	

#### 18MAT21

### **Second Semester BE Examination July 2021**

#### (CBCS Scheme)

Time: 3 Hours Max Marks: 100 marks

### **Sub: Engineering Mathematics - II**

**Q P Code: 60012** 

**Instructions:** 1. Answer **five full** questions.

- 2. Choose one full question from each module
- 3. Your answer should be specific to the questions asked.
- 4. write the same question numbers as they appear in this question paper.
- 5. Write Legibly

#### Module – 1

- 1 a Find the directional derivatives of  $\phi = x^2yz + 4xz^2$  at (1, -2, -1) along 2i j 2k.
  - b If  $\vec{A} = (3x^2y z)i + (xz^3 + y^4)j 2x^3z^2k$ , find  $grad(div\vec{A})$  at (2,-1,0).
  - c Show that  $\vec{F}$  = (y + z)i + (z + x)j + (x + y)k is irrotational. Also find a scalar function φ 7 marks such that  $\vec{F}$  =  $\nabla$  φ.

#### OR

- 2 a If  $\vec{F} = \nabla (xy^3z^2)$  find div $\vec{F}$  and curl $\vec{F}$  at the point (1, -1, 1).
- 6 marks

b If  $\vec{r} = xi + yj + zk$  and  $r = |\vec{r}|$  prove that  $\nabla (r^n) = nr^{n-2}\vec{r}$ .

7 marks

Show that  $\vec{F} = \frac{xi+yj}{x^2+y^2}$  is both solenoidal and irrotational.

## 7 marks

#### Module - 2

3 a Solve:  $\frac{d^3y}{dy^3} - 2\frac{d^2y}{dy^2} + 4\frac{dy}{dy} - 8y = 0$ .

6 marks

b Solve:  $y'' + 3y' + 2y = 12x^2$ .

7 marks

c Solve:  $(2x + 1)^2y'' - 6(2x + 1)y' + 16y = 8(2x + 1)^2$ .

7 marks

#### Or

4 a Solve:  $\frac{d^2y}{dx^2} - 2\frac{dy}{dx} + y = xe^x$ .

6 marks

b Solve by the method of variation of parameters  $y'' + y = \tan x$ .

7 marks

Solve:  $x^2 \frac{d^2y}{dx^2} - x \frac{dy}{dx} + y = x^2 \log x$ .

7 marks

#### Module - 3

5 a Form the partial differential equation by eliminating the arbitrary constants  $ax^2 + by^2 + z^2 = 1$ .

6 marks

7 marks

- b Solve  $\frac{\partial^2 z}{\partial x \partial y} = \sin x \cdot \sin y$  for which  $\frac{\partial z}{\partial y} = -2\sin y$  when x = 0 & z = 0 if y is an odd multiple of  $\frac{\pi}{2}$ . or  $\left[z = 0 \text{ if } y = (2n+1)\frac{\pi}{2}\right]$ .
- c Derive an expression for one dimensional wave equation.

7 marks

Form the PDE by eliminating the arbitrary function :  $z = e^{ax+by}f(ax - by)$ . 6

6marks

Solve:  $\frac{\partial^2 z}{\partial y^2} = z$  given that when y = 0,  $z = e^x \& \frac{\partial z}{\partial y} = e^{-x}$ .

7 marks

Discuss the variable possible solution of one dimensional heat equation.

7 marks

#### Module - 4

Discuss the convergence of  $\sum_{n=1}^{\infty} (1 + \frac{1}{n})^{n^2}$  by using Cauchy's root test. 7

6 marks

Test the convergence of series using D'Alembert's ratio test  $\frac{3}{4+1} + \frac{3^2}{4^2+1} + \frac{3^3}{4^3+1} + \frac{3^4}{4^4+1} + \cdots$ 

7 marks

- Obtain the series solution of the equation  $\frac{d^2y}{dx^2} + y = 0$ .

7 marks

Discuss the convergence of  $\sum_{n=1}^{\infty} \left(\frac{n+1}{n}\right)^{n^2} \frac{1}{3^n}$  by using Cauchy's root test. 8

6marks

7 marks

Prove that  $J_{\frac{1}{2}}(x) = \sqrt{\frac{2}{\pi x}} sinx$ . If  $x^3 + 2x^2 - x + 1 = aP_0(x) + bP_1(x) + cP_2(x) + dP_3(x)$  find the

7 marks

#### Module - 5

9 From the following table find the number of students who have obtained 6marks

- (a) less than 45 marks (b) between 40 and 45 marks. 50-60 | 60-70 Marks 30-40 | 40-50 | 70-80 No. of students
- Use Lagrange's interpolation formula to find y(2).

7 marks

X	0	1	3	4
у	-12	0	6	12

Evaluate  $\int_0^1 \frac{dx}{1+x^2}$  by using Simpson's  $1/3^{rd}$  rule taking four equal strips and hence deduce an approximate value of  $\pi$ .

7 marks

#### Or

Apply Newton's divided difference formula to find f(4) for the given data: 10

6 marks

X	0	2	3	6
f(x)	-4	2	14	158

Apply Newton-Raphson method to find an approximate root of the equation  $x^3 - 2x - 5 = 0$  which lies near x = 2.

7 marks

C Use weddle's rule to compute the area bounded by the curve y = f(x), x-axis and the extreme ordinates from the following table.

<u></u>								
	X	0	1	2	3	4	5	6
	У	0	2	2.5	2.3	2	1.7	1.5

\*\*\*\*

18EGH18

# First Semester BE Degree Examination July 2021 (CBCS Scheme)

Time: 3 Hours Max Marks: 100 marks

**Sub: ENGLISH I** 

Q P Code: 60001

**Instructions:** 1. Your answer should be specific to the questions asked.

- 2. write the same question numbers as they appear in this question paper.
- 3. Write Legibly

#### **Ouestion Paper Version – A**

			Question ra	per	Version – A
Ansv	ver all the question	ns			100X1=100
1	The students who ap	pply to engine	eering colleges	dro	p out because of lack of guidance.
	A. True	B. False	C. Neutral	D.	Not applicable
2	The students are not	t responsible	for the decision	is th	nat they take to join engineering.
	A. True	B. False	C. Neutral	D.	Not applicable
3	There is a massive of	difference bet	ween what a co	olleg	ge expects than a school from its students.
	A. True	B. False	C. Neutral	D.	Not applicable
4	of engineering.	ave clear pict		ey w	vant to become after engineering right from 1st year
	A. True	B. False	C. Neutral	D.	Not applicable
5	The students must n	ot approach t	the library for r	efer	ring to books which is prescribed in the syllabus.
	A. True	B. False	C. Neutral	D.	Not applicable
6	An engineer, in ord	ler to be perfo	orming well in t	thei	r career must have only technical knowledge.
	A. True	B. False	C. Neutral	D.	Not applicable
7	improvement.				trade and marketing has experienced drastic
	A. True	B. False	C. Neutral	D.	Not applicable
8	In order to be an eff	ective engine	er, one must pa	ay c	loser and keen attention to minutest details.
	A. True	B. False	C. Neutral	D.	Not applicable
9	Engineers do not re	quire leadersh	nip as well as m	nana	gement skills.
	A. True	B. False	C. Neutral	D.	Not applicable
10	Engineers know the	value of time	2.		
	A. True	B. False	C. Neutral	D.	Not applicable
11	mom is on	the phone.			
	A. You B. YourC.	You're	D. Yours		

12	looking a lot better t	han you diD.		
	A. You B. YourC. You're	D. Yours		
13	If in town, come by	and see us.		
	A. You B. YourC. You're	D. Yours		
14	If you do it again cer	tain to get sent to	the office.	
	A. You B. YourC. You're	D. Yours		
15	Was it brother i saw	last week?		
	A. You B. YourC. You're	D. Yours		
16	I hope that happy in	your new joB.		00
	A. You B. YourC. You're	D. Yours		,9,3
17	I hope you get lots of presents	on birtl	nday.	
	A. You B. YourC. You're	D. Yours		Ox
18	not going out lookin	g like that.		
	A. You B. YourC. You're	D. Yours	DI.	
19	I'm coming over to h	ouse to sort this	out.	
	A. You B. YourC. You're	D. Yours	), )	
20	Do you know where	going?		
	A. You B. YourC. You're	D. Yours		
21	The applause showed how dee	eply the presentat	ion had	the audience.
	A. Affect B. Effect	C. Affected	D. Effected	
22	His attitude was	by his up	bringing.	
	A. Affect B. Effect	C. Affected	D. Effected	
23	No matter what he does, it will	ll have no	on me.	
	A. Affect B. Effect	C. Affected	D. Effected	
24	No matter what he does, it will	ll not	me.	
	A. Affect B. Effect	C. Affected	D. Effected	
25	How was the team	by the lo	ss of their coach?	
	A. Affect B. Effect	C. Affected	D. Effected	
26	What is the type of introduction	on called, when it	is required to introduc	ce yourself in quick time frame?
	A. Self introduction B. Group	introduction C. F	Elevator introduction	D. None of these

27	Choose the best option v	which suits the bes	st for professional intro	oduction.	
	A. Dress appropriately	B. Keep eye conta	act C. Be confident D.	All of these	
28	A non – formally prepar	ed speech is called	D.		
	A. Extempore speaking	B. Presentation C	C. Debate D. Nor	ne of these	
29	Which of these element	is not involved in	the process of commu	nnication?	
	A. Pipe B. Sender	C. Message	D. Channel	<u> </u>	
30	Which of these is the thi	rd element of con	nmunication?		
	A. Sender B. Reciv	ver C. Chann	el D. Message	Q'	
31	Which of these is the mo	ost important tool	of communication?	00	
	A. Body language B. G	Sestures C. Langu	age D. Posture	17.5	
32	Which of these must be	avoided in any pro	esentation?		
	A. Proper grammar	B. Complex wo	ords C. Short senten	ces D. Clear voice	
33	Which of these is not im	portant in an oral	presentation?	A)	
	A. Words B. Body	language	C. Gestures	D. Audience size	
34	Which of these is the bes	st way to establish	a proper rapport with	audience?	
	A. Pointing finger	B. Making eye co	ontact C. Waving har	nds D.standing erect	
35	In an oral presentation, t	he speaker should	l not		
	A. Panic B. Pause	e C. Makin	g eye contact	D. Inspire	
36	Which number among th	ne following is div	visible by 7?		
	A.77754	B. 7666	C. 77784	D. 5643	
37	Which number among the	ne following is div	visible by 8?		
	A.762928	B. 220953	C. 19537455	D. None of these	
38	Which number among the	ne following is div	visible by both 7 and 1	1?	
	A.4540074	B. 293076	C. 1793498	D. 5740702	
39	Which of the following	number is divisibl	e by 63?		
	A.492815	B. 4107872	C. 5893407	D. 6221628	
40	Which number is divisib	ole by 18?			
	A.52794	B. 432181	C. 1725516	D. None of these	
41	What is the unit digit in	the product (365)	x 659 x 771)?		
	A.1	B. 2	C. 4	D. 6	РТО
				-	

42	What is the unit d	igit in 7105		
	a. 1	B. 5	C. 7	D. 9
43	How many 3-digit	t numbers are complet	tely divisible 6?	
	a. 140	B. 150	C. 151	D. 166
44	(112 + 122 + 132	+ + 202) = ?		
	A. 398	B. 2485	C. 4232	D.1563
45	What is the unit of	ligit in(795 - 358)?		1/2
	A. 0	B.4	C. 6	D. 7
46	What will be rema	ainder when 17200 is	divided by 18 ?	0.0
	a. 17	B. 16 C. 1	D. 2	
47		s divided by 13, the re hat is the number?	mainder is 11. When th	e same number is divided by 17, then
	A. 339	B. 349	C. 369	D. None of these
48	In a division sum, what is the divide		s the quotient and 5 tim	es the remainder. If the remainder is 46,
	A. 4236	B. 4036	C. 4336	D. 5336
49	On dividing a nunremainder?	nber by 357, we get 39	9 as remainder. On divi	ding the same number 17, what will be the
	A. 0	B. 3	C. 5	D. 11
50	On dividing a nun number is divided		remainder. What will the	he remainder when the square of the
	A. 0	B. 1	C. 2	D. 4
51	•	<u> </u>	e divisible by 3 but not 336, 7347, 8115, 9276	by 9 ?
	a. 5	B. 6	C. 7	D. None of these
52	The difference bet	tween the place value	and the face value of 6	in the numeral 856973 is
-	a. 973	B. 5994	C. 5973	D. 435
53	The smallest 6 dig	git number exactly div	isible by 111 is:	
	a. 111111	B. 11077	C. 100011	D. 2233109
54	The largest 5 digit	t number exactly divis	sible by 91 is:	
	a. 88899	B. 99918	C. 45361	D. 98978
55	What is the unit d	igit in (4137)754?		
	a. 1	B. 3	C. 7	D. 9

Read the following passages and answer the questions given below (q56-65)

The greening of the aged

- 1. A visit to most homes for the aged is so depressing that second visits are uncommon. The men and women we see there are listless, unresponsive, and often incapable of performing simple tasks. They appear unmotivated, uninterested, and turned away from others. Their debilitated physical and emotional condition is not a necessary consequence of old age. Rather, it is the inevitable result of being treated like a passive object in an institutional setting.
- 2. Recently, two young researchers from yale university, ellen langer and judith rodin, decided to see whether they could reverse the debilitated condition of residents in one of these old-age homes (1976). Their sample consisted of 91 residents, aged 65 to 90, all well enough to be walking about. The investigators reasoned that the crucial psychological process missing in such institutions was taking responsibility for one's own decisions. To be an actor in life's drama, we must act, decide, and be responsible for the consequences. To let others decide for us is to lose the main ingredient in self-esteem and competence.
- How are the residents of old age homes described in paragraph 1?

A. Healthy B. Sad C. Uncommon D. Weak, poor and troubled

57 According to the author, what is the reason for their poor condition?

A. Left out feel B. Uninterested C. Ill treated like a passive object D. None of these

58 (par. 2) what was the researchers' hypothesis; i.e., what idea was their research based on?

A. Improving self esteem B. Taking responsibility C.less competence D. Change the condition of the poor

59 (par. 2) what is the main ingredient in self-esteem and confidence?

A. Act and decide B. Decision making C. Debilated condition D.none of these

- 3. Accordingly, about half of the participants in the study were randomly assigned to a situation in which they received instructions that emphasized the need for them to take more responsibility for caring for themselves and for improving the quality of life in the home. They were then asked to choose a plant from among a box of them as a present but they were told they had to care for it. In contrast, the second group of patients was given instructions that stressed the responsibility of the staff to provide good services for the residents. They were handed a plant as a present and informed that the nurses would water it for them.
- 4. The results of the enhanced sense of personal responsibility were dramatiC. On questionnaire ratings and behavioral measures, the experimental group ("i'll do it myself") showed significant improvement over the comparison group ("let george do it for you") on alertness, active participation, and general sense of well-being.
- 60 (par. 4) how did the researchers measure the results of the study?

A. Questionnaire ratings B. Behavioral measures C.questionnaire ratings and behavioral measures D. None of these

Which group improved more?

A. Experimental B. Comparison C. Both D. None of these

62 In what areas did the better group show improvement?

A. Alertness B. Active participation C. Sense of well being D. All of these

- 5. Eighteen months later, these positive results still persisted, as indicated by the nurses' higher ratings of the happiness, sociability, and vigor of the personally responsible group. But most startling of all, encouraging the residents to be responsible for themselves and their plants made them live longer! The overall death rate for the entire nursing home during an eighteen-month period prior to the experiment was 25 percent. Following the experiment, only 15 percent of the personally responsible residents died, compared to twice as many for the no-responsibility group.
- 6. In conclusion, psychological interventions of this kind not only improve mood and attitudes; they seem to affect the very process of life and death itself.
- (par. 5) how were results 18 months later? 63 B. No change C. Results remained D. None of these A. Results perished What was the most surprising finding of the study? 64 B. Residents became brave C. Their plants made them live longer A. None changed None of these Choose the correct conclusion from the options given below. 65 B. Psychological interventions help residents C. People will not die A. Residents can be changed D. None of these When we read only to find the answer, this technique is calleD. 66 A. Skimming B. Scanning C. Churning D. Wringing When we read by skipping through sections of a passge, this technique is calleD. 67 C. Churning A. Skimming B. Scanning D. Wringing When we read only the headings to identify the answer, this technique is calleD. 68 A. Skimming B. Scanning C. Churning D. Wringing Which technique helps you to read upto 1000 words a minute? 69 B. Scanning A. Skimming C. Churning D. Wringing 70 Which technique is very useful to identify which section of a passage is to be read? A. Skimming B. Scanning C. Churning D. Wringing 71 In the 5 stages of listening process which stage is 'remembering'? A. Stage 1 B. Stage 2 C. Stage 3 D. Stage 4 In the 5 stages of listening process which stage is 'recieving'? A. Stage 1 B. Stage 2 C. Stage 3 D. Stage 4

A. Stage 4 B. Stage 1 C. Stage 3 D. Stage 5

73

74

A. Stage 1

In the 5 stages of listening process which stage is 'understanding'?

D. Stage 5

B. Stage 2 C. Stage 3

In the 5 stages of listening process which stage is 'evaluating'?

75	In the 5 stages	of listening proc	ess which stage	is 'responding'	?
	A. Stage 4	B. Stage 1	C. Stage 3	D. Stage 5	
76	What is the bar	rier of listening	called if a perso	n has hearing pr	roblems?
	A. Egotism	B. Rapid thou	ights C. Impair	ed hearing	D. None of these
77	What is the bar speaker's word	•	called if a perso	n's mind wande	ers onto topics which are not related to
	A. Egotism	B. Rapid thou	ights C. Impair	ed hearing	D. None of these
78	What is the bar	rier of listening	called if a perso	n is given a lot o	of information to receive?
	A. Egotism	B. Rapid thou	ights C. Overlo	aded messages	D. None of these
79	What is the bar	rier of listening	called if a perso	n cannot unders	tand the accent spoken by the speaker?
	A. Faulty assur	nptions B. Cultu	ral differences (	C. Egotism D. N	one of these
80	What is the bar	rier of listening	called if a perso	n thinks listenin	g is merely a passive activity?
	A. Faulty assur	nptions B. Cultu	ıral differences (	C. Egotism D. N	one of these
81	P5qr, p4qs, p3q	qt,, p1qv		\ \	
	A. Pqw	B. Pqv2	C. P2qu	D. Pq3u	
82	Qpo, nml, kji,	, edc		9.	
	A. Hgf	B. Cab		C. Jkl	D. Ghi
83	scd, tef, ugh, _	, wkl	0,,,		
	A. Cmn	B. Uji	C. Vij		D. Ijt
84	Elfa, glha, ilja,	, mlna			
	A. Olpa	B. Klma	C. Llma		D. Klla
85	In a certain coc	le, sikkim is writ	tten as thljjl, hov	w is training wri	tten in that code?
	A. Sqbhohof	B. Uqbhoiof	C. Uql	ohohoi	D. Uqbhohof
86	If completed is	coded as mocel	pdet, then direct	ion will be code	ed as:
	A. Ridtcenoj	B. Sidtcenoi	C. Ridtcenoi	D. Rietcenoi	
87	Eat+that=apple	e. What is a+l+t	?		
	A.13	B. 10	C. 11	D. 9	
88	Send+more=me	oney. What is m	+o+n+e+y?		
	A.11	B.12	C. 13	D. 14	

89	base+ball=gam	es. What is g+a-	+m+e+s?	
	A.21	B. 23	C. 25	D. 29
90	lets+wave=late	r. What is l+a+t-	+e+r?	
	A.12	B. 13	C. 14	D. 15
91	donald+gerald=	robert. What is	r+o+b+e+r+t?	
	A.22	B. 24	C. 26	D. 2
92	Scd, tef, ugh, _	, wkl		
	A.cmn	B.uji	C.vij	D. Ijt
93	Fag, gaf, hai, ia	ah,		
	A.jak	B. Hal C. Hal	D. Hai	50.5
94	Elfa, glha, ilja,	, mlna		
	A. Olpa	B. Kln	na C. Llma	D. Klla
95	Elf+elf=fool. W	/hat is f+o+o+l?	,	
	A.11	B. 12	C. 13	D. 14
96	Roads+cross=d	anger. What is o	l+a+n+g+e+r?	- 30
	A. 28	B. 31	C. 33	D. 35
97	Rab, scd, tef, _	, vij		
	A.gvh	B. Ugh	C. Uvg	D.hgu
98	Srq, pon, mlk,	, gfe	9,	
	A. Ijh	B. Jih	C. Jhi	D. Ihj
99	Kel, lfm, mgn,	nho, oip,		
	A.jpo	B. Pjo	C. Pjq	D. None of these
100	E2hi,	, ehi4, es	5hi, eh6i	
	A. Eh3i	B. Ei3h	C. I2e3h	D. None of these

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**18EGH18** 

#### First Semester BE Degree Examination July 2021 (CBCS Scheme)

Time: 3 Hours Max Marks: 100 marks Sub: ENGLISH I

**Q P Code: 60001** 

**Instructions:** 1. Your answer should be specific to the questions asked.

- 2. write the same question numbers as they appear in this question paper
- 3. Write Legibly

#### Question Paper Version - B Answer all the questions 100X1=100 How many of the following numbers are divisible by 3 but not by 9 1 2133, 2343, 3474, 4131, 5286, 5340, 6336, 7347, 8115, 9276 a. 5 B. 6 D. None of these The difference between the place value and the face value of 6 in the numeral 856973 is 2 a. 973 B. 5994 D. 435 3 The smallest 6 digit number exactly divisible by 111 is: C. 100011 a. 111111 B. 11077 D. 2233109 The largest 5 digit number exactly divisible by 91 is: 4 a. 88899 B. 99918 C. 45361 D. 98978 What is the unit digit in (4137)754? 5 C. 7 D. 9 a. 1 Read the following passages and answer the questions given below

(q06 - 15)

The greening of the aged

- 1. A visit to most homes for the aged is so depressing that second visits are uncommon. The men and women we see there are listless, unresponsive, and often incapable of performing simple tasks. They appear unmotivated, uninterested, and turned away from others. Their debilitated physical and emotional condition is not a necessary consequence of old age. Rather, it is the inevitable result of being treated like a passive object in an institutional setting.
- 2. Recently, two young researchers from yale university, ellen langer and judith rodin, decided to see whether they could reverse the debilitated condition of residents in one of these old-age homes (1976). Their sample consisted of 91 residents, aged 65 to 90, all well enough to be walking about. The investigators reasoned that the crucial psychological process missing in such institutions was taking responsibility for one's own decisions. To be an actor in life's drama, we must act, decide, and be responsible for the consequences. To let others decide for us is to lose the main ingredient in self-esteem and competence.

- 6 How are the residents of old age homes described in paragraph 1?
  - A. Healthy B. Sad C. Uncommon D. Weak, poor and troubled
- 7 According to the author, what is the reason for their poor condition?
  - A. Left out feel B. Uninterested C. Ill treated like a passive object D. None of these
- 8 (par. 2) what was the researchers' hypothesis; i.e., what idea was their research based on?
  - A. Improving self esteem B. Taking responsibility C.less competence D. Change the condition of the poor
- 9 (par. 2) what is the main ingredient in self-esteem and confidence?
  - A. Act and decide B. Decision making C. Debilated condition D.none of these
  - 3. Accordingly, about half of the participants in the study were randomly assigned to a situation in which they received instructions that emphasized the need for them to take more responsibility for caring for themselves and for improving the quality of life in the home. They were then asked to choose a plant from among a box of them as a present but they were told they had to care for it. In contrast, the second group of patients was given instructions that stressed the responsibility of the staff to provide good services for the residents. They were handed a plant as a present and informed that the nurses would water it for them.
  - 4. The results of the enhanced sense of personal responsibility were dramatiC. On questionnaire ratings and behavioral measures, the experimental group ("i'll do it myself") showed significant improvement over the comparison group ("let george do it for you") on alertness, active participation, and general sense of well-being.
- 10 (par. 4) how did the researchers measure the results of the study?
  - A. Questionnaire ratings B. Behavioral measures C.questionnaire ratings and behavioral measures D. None of these
- 11 Which group improved more?
  - A. Experimental B. Comparison C. Both D. None of these
- 12 In what areas did the better group show improvement?
  - A. Alertness B. Active participation C. Sense of well being D. All of these
  - 5. Eighteen months later, these positive results still persisted, as indicated by the nurses' higher ratings of the happiness, sociability, and vigor of the personally responsible group. But most startling of all, encouraging the residents to be responsible for themselves and their plants made them live longer! The overall death rate for the entire nursing home during an eighteen-month period prior to the experiment was 25 percent. Following the experiment, only 15 percent of the personally responsible residents died, compared to twice as many for the no-responsibility group.
  - 6. In conclusion, psychological interventions of this kind not only improve mood and attitudes; they seem to affect the very process of life and death itself.
- 13 (par. 5) how were results 18 months later?
  - A. Results perished B. No change C. Results remained D. None of these
- 14 What was the most surprising finding of the study?
  - A. None changed B. Residents became brave C. Their plants made them live longer D. None of these

15	Choose the correct conclusion from the options given below.			
	A. Residents can D. None of these		gical interventions help res	idents C. People will not die
16	When we read o	only to find the answer, this te	chnique is calleD.	
	A. Skimming	B. Scanning	C. Churning	D. Wringing
17	When we read b	y skipping through sections of	of a passge, this technique	is calleD.
	A. Skimming	B. Scanning	C. Churning	D. Wringing
18	When we read o	only the headings to identify the	he answer, this technique is	s calleD.
	A. Skimming	B. Scanning	C. Churning	D. Wringing
19	Which techniqu	e helps you to read upto 1000	words a minute?	0,5
	A. Skimming	B. Scanning	C. Churning	D. Wringing
20	Which techniqu	e is very useful to identify wh	nich section of a passage is	to be read?
	A. Skimming	B. Scanning	C. Churning	D. Wringing
21	In the 5 stages of	of listening process which stag	ge is 'remembering'?	
	A. Stage 1	B. Stage 2 C. Stage 3	D. Stage 4	
22	In the 5 stages of	of listening process which stag	ge is 'recieving'?	
	A. Stage 1	B. Stage 2 C. Stage 3	D. Stage 4	
23	In the 5 stages of	of listening process which stag	ge is 'understanding'?	
	A. Stage 1	B. Stage 2 C. Stage 3	D. Stage 5	
24	In the 5 stages of	f listening process which stag	ge is 'evaluating'?	
	A. Stage 4	B. Stage 1 C. Stage 3	D. Stage 5	
25	In the 5 stages of	f listening process which stag	ge is 'responding'?	
	A. Stage 4	B. Stage 1 C. Stage 3	D. Stage 5	
26	What is the barr	ier of listening called if a pers	son has hearing problems?	
	A. Egotism	B. Rapid thoughts C. Impa	nired hearing D. No.	ne of these
27	What is the barr speaker's words	ier of listening called if a pers?	son's mind wanders onto to	opics which are not related to
	A. Egotism	B. Rapid thoughts C. Impa	nired hearing D. No.	ne of these
28	What is the barr	ier of listening called if a pers	son is given a lot of inform	nation to receive?
	A. Egotism	B. Rapid thoughts C. Over	loaded messages D. None	of these
29	What is the barr	ier of listening called if a pers	son cannot understand the	accent spoken by the speaker?

30	What is the bar	•	called if a person		U	y a passive activity?
	A. Faulty assur	mptions B. Cultu	ıral differences (	C. Egotism D.	None of the	se
31	P5qr, p4qs, p3	qt,, p1qv				
	A. Pqw	B. Pqv2	C. P2qu	D. Pq3	Bu	
32	Qpo, nml, kji,	, edc				
	A. Hgf	B. Cab	)	C. Jkl	D.	Ghi
33	scd, tef, ugh, _	, wkl				
	A. Cmn	B. Uji	C. Vij		D. Ijt	00
34	Elfa, glha, ilja,	,, mlna				0,5
	A. Olpa	B. Klma	C. Llma		D. Klla	KV.
35	In a certain coo	de, sikkim is writ	tten as thljjl, hov	v is training w	ritten in that	code?
	A. Sqbhohof	B. Uqbhoiof	C. Uql	ohohoi	D. Uqbl	nohof
36	If completed is	s coded as mocel	pdet, then direct	ion will be co	ded as:	
	A. Ridtcenoj	B. Sidtcenoi	C. Ridtcenoi	D. Rietceno	i	
37	Eat+that=appl	le. What is a+l+t	?	2/.2		
	A.13	B. 10	C. 11	D. 9		
38	Send+more=m	oney. What is m	+o+n+e+y?			
	A.11	B.12	C. 13	D. 14		
39	base+ball=gan	nes. What is g+a-	+m+e+s?			
	A.21	B. 23	C. 25	D. 29		
40	lets+wave=late	er. What is 1+a+t-	+e+r?			
	A.12	B. 13	C. 14	D. 15		
41	donald+gerald	=robert. What is	r+o+b+e+r+t?			
	A.22	B. 24	C. 26	D. 2		
42	Scd, tef, ugh, _	, wkl				
	A.cmn	B.uji	C.vij	D. Ijt		
43	Fag, gaf, hai,	iah,				
	A.jak	B. Hal C. Hal	D. Hai			

Elfa, glha, ilja, \_\_\_\_, mlna

PTO

	A. Olpa	B. Klm	a C. Llma	D. Klla	
45	Elf+elf=fool. Wh	at is f+o+o+l?			
	A.11 I	3. 12	C. 13	D. 14	
46	Roads+cross=dar	<del>.</del> ?			
	A. 28	3. 31	C. 33	D. 35	
47	Rab, scd, tef,	, vij			
	A.gvh	B. Ugh	C. Uvg	D.hgu	
48	Srq, pon, mlk,	, gfe			
	A. Ijh	B. Jih	C. Jhi	D. Ihj	
49	Kel, lfm, mgn, nh	no, oip,		$\mathcal{A}_{\mathcal{A}}$	
	A.jpo	B. Pjo	C. Pjq	D. None of these	
50	E2hi,	, ehi4, e5	hi, eh6i	, *O	
	A. Eh3i	B. Ei3h	C. I2e3h	D. None of these	
51	The students who	apply to engir	neering colle	eges drop out because of lack of guidance.	
	A. True	B. False	C. Neutra	D. Not applicable	
52	The students are	not responsible	for the deci	sions that they take to join engineering.	
	A. True	B. False	C. Neutra	D. Not applicable	
53	There is a massiv	e difference be	etween what	a college expects than a school from its students.	
	A. True	B. False	C. Neutra	D. Not applicable	
54	The students must have clear picture of what they want to become after engineering right from 1st year of engineering.				
	A. True	B. False	C. Neutra	D. Not applicable	
55	The students mus	st not approach	the library f	or referring to books which is prescribed in the syllabus.	
	A. True	B. False	C. Neutra	D. Not applicable	
56	An engineer, in o	order to be perf	forming well	I in their career must have only technical knowledge.	
	A. True	B. False	C. Neutra	D. Not applicable	
57		reasons for wh	nich the com	amerce, trade and marketing has experienced drastic	
	improvement. A. True	B. False	C. Neutra	D. Not applicable	
58	In order to be an	effective engin	eer, one mu	st pay closer and keen attention to minutest details.	
	A. True	B. False	C. Neutra	D. Not applicable	
59	Engineers do not	require leaders	ship as well	as management skills.	
	A. True	B. False	C. Neutra	D. Not applicable	
60	Engineers know to	the value of tim	ne.		
	A. True	B. False	C. Neutra	D. Not applicable	

61	mom is on the ph	one.				
	A. You B. Your C.	You're	D. You	rs ·		
62	looking a lot bette	er than you o	liD.			
	A. You B. Your	C. You're	D. You	rs.		
63	If in town, come	by and see u	s.			
	A. You B. YourC. You're	D. Yo	urs			
64	If you do it again	certain to go	et sent to t	he office.		
	A. You B. YourC. You're	D. Yo	urs			
65	Was it brother i saw last week?					
	A. You B. YourC. You're	D. Yo	urs		KV	
66	I hope that happy	in your new	joB.		Ox	
	A. You B. Your	C. You're	D. You	rs		
67	I hope you get lots of prese	ents on	birtho	lay.		
	A. You B. Your C.	You're	D. You	cs C		
68	not going out loo	king like tha	t.	) \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		
	A. You B. Your C.	You're	D. You	°S		
69	I'm coming over to	house to s	ort this ou	ıt.		
	A. You B. YourC. You're	D. Yo	urs			
70	Do you know where					
	A. You B. YourC. You're					
71	The applause showed how				the audience.	
		C. Aft		D. Effected		
72	His attitude was  A. Affect B. Effect		_	oringing.  D. Effected		
73	No matter what he does, it					
13						
7.4				D. Effected		
74	No matter what he does, it					
7.5	A. Affect B. Effect			D. Effected		
75	How was the team		•			
	A. Affect B. Effect	C. Aft	ected	D. Effected		

76	What is the type of introduction called, when it is required to introduce yourself in quick time frame?						
	A. Self introduction B. Group in	ntroduction C. Elevator introduc	ction D. None of these				
77	Choose the best option which so	Choose the best option which suits the best for professional introduction.					
	A. Dress appropriately B. Kee	p eye contact C. Be confident D	O. All of these				
78	A non – formally prepared speech is calleD.						
	A. Extempore speaking B. Pres	entation C. Debate D. No	ne of these				
79	Which of these element is not involved in the process of communication?						
	A. Pipe B. Sender C. Mes	sage D. Channel					
80	Which of these is the third elem	ent of communication?	200				
	A. Sender B. Reciver	C. Channel D. Message	N.				
81	Which of these is the most impo	ortant tool of communication?	·O `				
	A. Body language B. Gestures	C. Language D. Posture					
82	Which of these must be avoided	l in any presentation?					
	A. Proper grammar B. C	omplex words C. Short senter	nces D. Clear voice				
83	Which of these is not important	in an oral presentation?					
	A. Words B. Body langua	ge C. Gestures	D. Audience size				
84	Which of these is the best way to establish a proper rapport with audience?						
	A. Pointing finger B. Ma	king eye contact C. Waving ha	ands D.standing erect				
85	In an oral presentation, the spea	ker should not					
	A. Panic B. Pause	C. Making eye contact	D. Inspire				
86	Which number among the follo	wing is divisible by 7?					
	A.77754 B. 7666	6 C. 77784	D. 5643				
87	Which number among the follo	wing is divisible by 8?					
	A.762928 B. 2209	953 C. 19537455	D. None of these				
88	Which number among the follow	wing is divisible by both 7 and 1	11?				
	A.4540074 B. 2930	O76 C. 1793498	D. 5740702				
89	Which of the following number	is divisible by 63?					
	A.492815 B. 410	7872 C. 5893407	D. 6221628				
90	Which number is divisible by 18?						
	A.52794 B. 432	181 C. 1725516	D. None of these				

91	What is the unit digit in the product $(365 \times 659 \times 771)$ ?					
	A.1	B. 2	C. 4	D. 6		
92	What is the unit dig	it in 7105				
	a. 1	B. 5	C. 7	D. 9		
93	How many 3-digit n	numbers are comple	etely divisible 6?			
	a. 140	B. 150	C. 151	D. 166		
94	(112 + 122 + 132 +	+ 202) = ?		ON		
	A. 398	B. 2485	C. 4232	D.1563		
95	What is the unit dig	git in(795 - 358)?		3		
	A. 0	B.4	C. 6	D. 7		
96	What will be remain	nder when 17200 is	divided by 18?			
	a. 17 B.	16 C. 1	1 D. 2	2		
97	When a number is dremainder is 9. What		emainder is 11. When th	ne same number is divided by 17, then		
	A. 339	B. 349	C. 369	D. None of these		
98	In a division sum, the divisor is 10 times the quotient and 5 times the remainder. If the remainder is 46, what is the dividend?					
	A. 4236	B. 4036	C. 4336	D. 5336		
99	On dividing a number by 357, we get 39 as remainder. On dividing the same number 17, what will be the remainder?					
	A. 0	B. 3	C. 5	D. 11		
100	On dividing a number by 5, we get 3 as remainder. What will the remainder when the square of the number is divided by 5?					
	A. 0	B. 1	C. 2	D. 4		
	CO		****			

18EGH18

### First Semester BE Degree Examination July 2021 (CBCS Scheme)

Time: 3 Hours Max Marks: 100 marks Sub: ENGLISH I **Q P Code: 60001** Instructions: 1. Your answer should be specific to the questions asked. 2. write the same question numbers as they appear in this question paper. 3. Write Legibly **Question Paper Version – C** Answer all the questions What is the type of introduction called, when it is required to introduce yourself in quick time frame? 1 C. Elevator introduction D. None of these A. Self introduction B. Group introduction 2 Choose the best option which suits the best for professional introduction. A. Dress appropriately B. Keep eye contact C. Be confident D. All of these A non – formally prepared speech is calleD. 3 A. Extempore speaking B. Presentation C. Debate D. None of these Which of these element is not involved in the process of communication? 4 C. Message D. Channel A. Pipe B. Sender Which of these is the third element of communication? 5 A. Sender B. Reciver C. Channel D. Message Which of these is the most important tool of communication? 6 A. Body language B. Gestures C. Language D. Posture Which of these must be avoided in any presentation? 7 A. Proper grammar B. Complex words C. Short sentences D. Clear voice 8 Which of these is not important in an oral presentation? D. Audience size A. Words B. Body language C. Gestures Which of these is the best way to establish a proper rapport with audience? 9 B. Making eye contact C. Waving hands A. Pointing finger D. Standing erect

In an oral presentation, the speaker should not \_\_\_\_\_

	A. Panic	B. Pause	C. Making	eye contact	D. Inspire	P/F/O
11	Which numbe	r among the foll	owing is divi	sible by 7?		PTO
	A.77754	B. 760	66 C.	77784	D. 5643	
12	Which numbe	r among the foll	owing is divi	sible by 8?		
	A.762928	B. 220	)953 C	. 19537455	D. None of these	e
13	Which numbe	r among the foll	owing is divi	sible by both 7	and 11?	
	A.4540074	B. 293	3076 C	C. 1793498	D. 5740702	
14	Which of the	following number	r is divisible	by 63?		
	A.492815	B. 41	07872	C. 5893407	D. 6221628	$\Diamond_{I_{\sigma}}$
15	Which numbe	r is divisible by	18?			0,
	A.52794	B. 432	2181	C. 1725516	D. None of thes	se
16	What is the ur	nit digit in the pro	oduct (365 x	659 x 771)?		
	A.1	B. 2		C. 4	D. 6	
17	What is the ur	nit digit in 7105			, 10	
	a. 1	B. 5		C. 7	D. 9	
18	How many 3-	digit numbers ar	e completely	divisible 6?		
	a. 140	B. 1	50	C. 151	D. 166	
19	(112 + 122 +	132 + + 202) =	= ?	0,0		
	A. 398	B. 24	185	C. 4232	D.1563	
20	What is the u	nit digit in(795 -	358)?			
	A. 0	B.4	-0	C. 6	D. 7	
21	What will be a	remainder when	17200 is divi	ded by 18 ?		
	a. 17	B. 16	C. 1		D. 2	
22				nder is 11. Wh	en the same number is o	divided by 17, then
	remainder is 9 A. 339	P. What is the number B. 34		C. 369	D. None	of these
23			s 10 times th	e quotient and	5 times the remainder. I	If the remainder is 46,
	what is the div	vidend? B. 403	36	C. 4336	D. 5336	
24					n dividing the same num	ber 17, what will be the
-	remainder?	В. 3	υ	C. 5	D. 11	,
25			a gat 3 ac ram		will the remainder when	the square of the
23	number is div	ided by 5?	get 3 as ten			the square of the
	A. 0	B. 1		C. 2	D. 4	
26		the following nu 474, 4131, 5286,		-		
	a. 5	B. 6		C. 7	D. None of	of these
27	The difference	e between the pla	ice value and	the face value	of 6 in the numeral 856	5973 is

28	The smallest 6 digi	it number exactly divi	sible by 111 is:				
	a. 111111	B. 11077	C. 100011	D. 2	233109		
29	The largest 5 digit	number exactly divisi	ible by 91 is:				
	a. 88899	B. 99918	C. 45361	D. 98	3978		
30	What is the unit dig	git in (4137)754?					
	a. 1	B. 3	C. 7	D. 9			
	Read the following (q31 – 40)	g passages and answer	-		DIA.		
	The greening of the aged  1. A visit to most homes for the aged is so depressing that second visits are uncommon. The men and women we see there are listless, unresponsive, and often incapable of performing simple tasks. They appear unmotivated, uninterested, and turned away from others. Their debilitated physical and emotional condition is not a necessary consequence of old age. Rather, it is the inevitable result of being treated like a passive object in an institutional setting.						
	2. Recently, two young researchers from yale university, ellen langer and judith rodin, decided to see whether they could reverse the debilitated condition of residents in one of these old-age homes (1976). Their sample consisted of 91 residents, aged 65 to 90, all well enough to be walking about. The investigators reasoned that the crucial psychological process missing in such institutions was taking responsibility for one's own decisions. To be an actor in life's drama, we must act, decide, and be responsible for the consequences. To let others decide for us is to lose the main ingredient in self-esteem and competence.						
31	How are the reside	nts of old age homes	described in parag	raph 1?			
	A. Healthy B.	Sad C. Uncommo	on D. Weak,	poor and trouble	d		
32	According to the a	uthor, what is the reas	son for their poor o	condition?			
	A. Left out feel B.	Uninterested C. Ill tr	eated like a passiv	e object D.	None of these		
33	(par. 2) what was t	he researchers' hypot	hesis; i.e., what ide	ea was their resea	rch based on?		
	A. Improving self of the poor	esteem B. Taking re	esponsibility C	Cless competence	D. Change the condition of		
34	(par. 2) what is the	main ingredient in se	elf-esteem and con	fidence?			
	A. Act and decide	B. Decision n	naking C. Debilate	d condition D.nor	ne of these		
	A. Act and decide B. Decision making C. Debilated condition D.none of these  3. Accordingly, about half of the participants in the study were randomly assigned to a situation in which they received instructions that emphasized the need for them to take more responsibility for caring for themselves and for improving the quality of life in the home. They were then asked to choose a plan from among a box of them as a present – but they were told they had to care for it. In contrast, the second group of patients was given instructions that stressed the responsibility of the staff to provide good services for the residents. They were handed a plant as a present and informed that the nurses would water it for them.						
35	and behavioral me over the comparis- sense of well-being	easures, the experiment on group ("let georg	ntal group ("i'll de do it for you")	o it myself") sho on alertness, acti	tiC. On questionnaire ratings wed significant improvement we participation, and general		

C. 5973

D. 435

B. 5994

a. 973

	A. Questionnaire rating measures D. None of the	gs B. Behavioral meausinese	res C.questionna	aire ratii	ngs and	behavioral
36	Which group improved	I more?				PTO
	A. Experimental	B. Comparison C. Both	n D. None of these			
37	In what areas did the be	etter group show improve	ement?			
	A. Alertness B. Active	participation C. Sense of	well being D. A	all of these		
	the happiness, sociabi encouraging the reside overall death rate for t was 25 percent. Follow	er, these positive results so lity, and vigor of the parts to be responsible for the entire nursing home wing the experiment, only many for the no-responsible	personally responsible themselves and their during an eighteen-may 15 percent of the pe	group. But glants mad onth period	ut most sta e them live l prior to the	rtling of all, longer! The experiment
		chological interventions of process of life and death		improve n	nood and at	titudes; they
38	(par. 5) how were result	Its 18 months later?				
	A. Results perished	B. No change C. Resu	lts remained D. None	of these		
39	What was the most sur	prising finding of the stu	dy?			
	A. None changed D. None of these	B. Residents became be	rave C. Their plan	nts made th	em live long	ger
40	Choose the correct con	clusion from the options	given below.			
<b>4</b> 1	A. Residents can be choosed. None of these When we read only to	anged B. Psychologic find the answer, this tech	al interventions help r	esidents	C. People	will not die
	A. Skimming	B. Scanning	C. Churning	D. Wri	nging	
42	When we read by skipp	oing through sections of a	a passge, this techniqu	e is calleD.		
	A. Skimming	B. Scanning	C. Churning	D. Wri	nging	
43	When we read only the	headings to identify the	answer, this technique	e is calleD.		
	A. Skimming	B. Scanning	C. Churning	D. Wri	nging	
44	Which technique helps	you to read upto 1000 w	ords a minute?			
	A. Skimming	B. Scanning	C. Churning	D. Wri	nging	
45	Which technique is ver	y useful to identify which	h section of a passage	is to be rea	d?	
	A. Skimming	B. Scanning	C. Churning	D. Wri	nging	
46	In the 5 stages of listen	ing process which stage	is 'remembering'?			
	A. Stage 1 B	. Stage 2 C. Stage 3	D. Stage 4			
47	In the 5 stages of listen	ing process which stage	is 'recieving'?			
	A. Stage 1 B	. Stage 2 C. Stage 3	D. Stage 4			
48	In the 5 stages of listen	ing process which stage	is 'understanding'?			
	A. Stage 1 B	. Stage 2 C. Stage 3	D. Stage 5			

49	In the 5 stages of listening process which stage is 'evaluating'?				
	A. Stage 4	B. Stage	1 C. Stage 3	D. Stage 5	
50	In the 5 stages	of listening proc	ess which stage	is 'responding'	?
	A. Stage 4	B. Stage	1 C. Stage 3	D. Stage 5	
51	What is the bar	rier of listening	called if a perso	n has hearing p	roblems?
	A. Egotism	B. Rapid thou	ights C. Impair	ed hearing	D. None of these
52	What is the bar speaker's word A. Egotism	ls?	called if a personaghts C. Impair		ers onto topics which are not related to  D. None of these
53	· ·	•		· ·	of information to receive?
	A. Egotism		_	-	D. None of these
54	•	•		•	stand the accent spoken by the speaker?
		· ·	ral differences (		
55	•				ng is merely a passive activity?
		•	ıral differences (		XO.
56	P5qr, p4qs, p3q	qt,, p1qv			
	A. Pqw		C. P2qu	D. Pq3ı	1
57	Qpo, nml, kji,	, edc	_	00	
	A. Hgf	B. Cab		C. Jkl	D. Ghi
58	scd, tef, ugh, _	, wkl		5)	
	A. Cmn	B. Uji	C. Vij		D. Ijt
59	Elfa, glha, ilja,	, mlna	$\mathcal{O}(\mathcal{O}(\mathcal{O}))$		
	A. Olpa	B. Klma	C. Llma		D. Klla
60	In a certain cod	le, sikkim is wri	tten as thljjl, hov	v is training wr	itten in that code?
	A. Sqbhohof	B. Uqbhoiof	C. Uql	ohohoi	D. Uqbhohof
61	If completed is	coded as mocel	pdet, then direct	ion will be cod	ed as:
	A. Ridtcenoj	B. Sidtcenoi	C. Ridtcenoi	D. Rietcenoi	
62	Eat+that=appl	e. What is a+l+t	?		
	A.13	B. 10	C. 11	D. 9	
63	Send+more=m	oney. What is m	1+0+n+e+y?		
	A.11	B.12	C. 13	D. 14	
64	base+ball=gam	es. What is g+a-	+m+e+s?		
	A.21	B. 23	C. 25	D. 29	
65	lets+wave=late	r. What is 1+a+t	+e+r?		
	A.12	B. 13	C. 14	D. 15	
66	donald+gerald=	robert. What is	r+o+b+e+r+t?		
	A 22	B 24	C 26	D 2	

67	Scd, tef, ugh,	_, wkl			
	A.cmn B	.uji	C.vij	D. Ijt	ртΩ
68	Fag, gaf, hai, iah,	,		Γ	PTO
	A.jak B	B. Hal C. Hal	D. Hai		
69	Elfa, glha, ilja,	, mlna			
	A. Olpa	B. Klm	a C. Llma	D. Klla	
70	Elf+elf=fool. Wha	at is f+o+o+l?			
	A.11 B	3. 12	C. 13	D. 14	
71	Roads+cross=dan	ger. What is d	+a+n+g+e+r?	0.0	
	A. 28 B	3. 31	C. 33	D. 35	
72	Rab, scd, tef,	, vij			
	A.gvh	B. Ugh	C. Uvg D.	hgu	
73	Srq, pon, mlk,	, gfe			
	A. Ijh	B. Jih	C. Jhi D	O. Ihj	
74	Kel, lfm, mgn, nh	o, oip,		3	
	A.jpo	B. Pjo	C. Pjq D	. None of these	
75	E2hi,	, ehi4, e5	ihi, eh6i		
	A. Eh3i	B. Ei3h	C. I2e3h	D. None of these	
76	The students who	apply to engi	neering colleges	drop out because of lack of guidance.	
	A. True	B. False	C. Neutral	D. Not applicable	
77	The students are r	not responsible	e for the decision	ns that they take to join engineering.	
	A. True	B. False	C. Neutral	D. Not applicable	
78	There is a massive	e difference be	etween what a co	ollege expects than a school from its students.	
	A. True	B. False	C. Neutral	D. Not applicable	
79	of engineering.	_		ey want to become after engineering right from 1st year	ar
	A. True	B. False	C. Neutral	D. Not applicable	
80			•	referring to books which is prescribed in the syllabus.	
	A. True	B. False	C. Neutral	D. Not applicable	
81	An engineer, in o	order to be per	forming well in	their career must have only technical knowledge.	
	A. True	B. False	C. Neutral	D. Not applicable	
82	Engineers are the improvement. A. True	B. False	hich the comme	rce, trade and marketing has experienced drastic  D. Not applicable	

	A. True	B. False	C. Neutral	D. Not applicable	
84	Engineers do not i	require leader	ship as well as m	anagement skills.	
	A. True	B. False	C. Neutral	D. Not applicable	
85	Engineers know th	ne value of tir	me.		
	A. True	B. False	C. Neutral	D. Not applicable	
86	mom is o	on the phone.			
	A. You B. YourC	. You're	D. Yours		
87	looking	a lot better tha	an you diD.		
	A. You B. YourC	. You're	D. Yours		
88	If in tow	n, come by ar	nd see us.		0
	A. You B. YourC	. You're	D. Yours		N.
89	If you do it again	certa	ain to get sent to t	the office.	
	A. You B. YourC	. You're	D. Yours		KO .
90	Was it b	rother i saw la	ast week?		
	A. You B. YourC	. You're	D. Yours		
91	I hope that	happy in y	our new joB.	00'	
	A. You B. YourC	. You're	D. Yours	, 'D'	
92	I hope you get lots	s of presents of	on birtho	day.	
	A. You B. YourC	. You're	D. Yours		
93	not going	g out looking	like that.		
	A. You B. YourC	. You're	D. Yours		
94	I'm coming over to	o ho	use to sort this ou	ıt.	
	A. You B. YourC	. You're	D. Yours		
95	Do you know whe	ere g	oing?		
	A. You B. YourC	. You're	D. Yours		
96	The applause show	wed how deep	oly the presentation	on had	_ the audience.
		. Effect	C. Affected	D. Effected	
97	His attitude was _		by his upb	oringing.	
	A. Affect B	. Effect	C. Affected	D. Effected	
98	No matter what he	e does, it will	have no	on me.	
		. Effect	C. Affected		
99	No matter what he				
	A. Affect B	. Effect	C. Affected	D. Effected	
100	How was the team	າ	by the loss	s of their coach?	

In order to be an effective engineer, one must pay closer and keen attention to minutest details.

#### \*\*\*

### ADICHUNCHANAGIRI UNIVERSITY

18EGH18

### First Semester BE Degree Examination July 2021 (CBCS Scheme)

Time: 3 Hours Max Marks: 100 marks

Sub: ENGLISH I

**Q P Code: 60001** 

**Instructions:** 1. Your answer should be specific to the questions asked.

B. Stage 1 C. Stage 3

A. Stage 4

2. write the same question numbers as they appear in this question paper.

3. Write Legibly

		Question Pa	aper Version – D		
Ansv	wer all the question	ıs			100X1=100
1	When we read only	to find the answer, this tech	hnique is calleD.		
	A. Skimming	B. Scanning	C. Churning	D. Wringing	
2	When we read by sk	cipping through sections of	a passge, this technique	is calleD.	
	A. Skimming	B. Scanning	C. Churning	D. Wringing	
3	When we read only	the headings to identify the	e answer, this technique i	s calleD.	
	A. Skimming	B. Scanning	C. Churning	D. Wringing	
4	Which technique he	lps you to read upto 1000 v	words a minute?		
	A. Skimming	B. Scanning	C. Churning	D. Wringing	
5	Which technique is	very useful to identify which	ch section of a passage is	to be read?	
	A. Skimming	B. Scanning	C. Churning	D. Wringing	
6	In the 5 stages of lis	tening process which stage	e is 'remembering'?		
-	A. Stage 1	B. Stage 2 C. Stage 3	D. Stage 4		
7	In the 5 stages of lis	tening process which stage	e is 'recieving'?		
	A. Stage 1	B. Stage 2 C. Stage 3	D. Stage 4		
8	In the 5 stages of lis	tening process which stage	e is 'understanding'?		
	A. Stage 1	B. Stage 2 C. Stage 3	D. Stage 5		
9	In the 5 stages of lis	tening process which stage	e is 'evaluating'?		

D. Stage 5

	A. Stage 4	B. Stage 1	C. Stage 3	D. Stage 5		РТО
11	What is the barri	ier of listening c	alled if a person	has hearing pro		110
	A. Egotism	_	ghts C. Impaire		D. None of these	
12		ier of listening c	-	_	s onto topics which are not related to	)
	A. Egotism	B. Rapid thoug	ghts C. Impaire	d hearing	D. None of these	
13	What is the barri	ier of listening c	alled if a person	is given a lot of	f information to receive?	
	A. Egotism	B. Rapid thoug	ghts C. Overloa	ided messages [	O. None of these	
14	What is the barri	ier of listening c	alled if a person	cannot understa	and the accent spoken by the speake	r?
	A. Faulty assum	ptions B. Cultur	al differences C	. Egotism D. No	one of these	
15	What is the barri	ier of listening c	alled if a person	thinks listening	g is merely a passive activity?	
	A. Faulty assum	ptions B. Cultur	al differences C	. Egotism D. No	one of these	
16	P5qr, p4qs, p3qt	,, p1qv		CA		
	A. Pqw	B. Pqv2 C.	. P2qu	D. Pq3u		
17	Qpo, nml, kji, _	, edc		9.		
	A. Hgf	B. Cab	C	. Jkl	D. Ghi	
18	scd, tef, ugh,	, wkl	$\mathfrak{I}_{\mathcal{I}_{I}}}}}}}}}}$			
	A. Cmn	B. Uji	C. Vij	Γ	). Ijt	
19	Elfa, glha, ilja, _	, mlna				
	A. Olpa	B. Klma	C. Llma	Γ	D. Klla	
20	In a certain code	e, sikkim is writt	en as thljjl, how	is training writt	ten in that code?	
	A. Sqbhohof	B. Uqbhoiof	C. Uqbi	hohoi	D. Uqbhohof	
21	If completed is c	coded as mocelp	det, then direction	on will be coded	l as:	
	A. Ridtcenoj	B. Sidtcenoi	C. Ridtcenoi	D. Rietcenoi		
22	Eat+that=apple.	. What is a+l+t?				
	A.13	B. 10	C. 11	D. 9		
23	Send+more=more	ney. What is m+	-o+n+e+y?			
	A.11	B.12	C. 13	D. 14		
24	base+ball=game	s. What is g+a+	m+e+s?			

In the 5 stages of listening process which stage is 'responding'?

	A.21	B. 23	C. 25	D. 29
25	lets+wave=late	r. What is 1+a+	t+e+r?	
	A.12	B. 13	C. 14	D. 15
26	donald+gerald=	robert. What is	s r+o+b+e+r+t?	
	A.22	B. 24	C. 26	D. 2
27	Scd, tef, ugh, _	, wkl		
	A.cmn	B.uji	C.vij	D. Ijt
28	Fag, gaf, hai, i	ah,		
	A.jak	B. Hal C. Ha	l D. Hai	OF
29	Elfa, glha, ilja,	, mlna		
	A. Olpa	B. Klı	ma C. Llma	D. Klla
30	Elf+elf=fool. V	What is f+o+o+l	?	.9.5
	A.11	B. 12	C. 13	D. 14
31	Roads+cross=d	langer. What is	d+a+n+g+e+r?	Ox
	A. 28	B. 31	C. 33	D. 35
32	Rab, scd, tef, _	, vij		
	A.gvh	B. Ugh	C. Uvg D	.hgu
33	Srq, pon, mlk,	, gfe		0,0
	A. Ijh	B. Jih	C. Jhi	D. Ihj
34	Kel, lfm, mgn,	nho, oip,	_	
	A.jpo	B. Pjo	C. Pjq I	D. None of these
35	E2hi,	, ehi4, e	e5hi, eh6i	
	A. Eh3i	B. Ei3h	C. I2e3h	D. None of these
36	The students w	ho apply to eng	ineering college	s drop out because of lack of guidance.
	A. True	B. False	C. Neutral	D. Not applicable
37	The students ar	e not responsib	le for the decision	ons that they take to join engineering.
	A. True	B. False	C. Neutral	D. Not applicable
38	There is a mass	sive difference l	between what a	college expects than a school from its students.
	A. True	B. False	C. Neutral	D. Not applicable
39		ust have clear p	oicture of what the	ney want to become after engineering right from 1st yea
	of engineering.  A. True	B. False	C. Neutral	D. Not applicable
40		ust not approac	h the library for	referring to books which is prescribed in the syllabus.
	A. True	B. False	C. Neutral	D. Not applicable
41				their career must have only technical knowledge.
	A. True	B. False	C. Neutral	D. Not applicable
42				erce, trade and marketing has experienced drastic

	A. True B. False C. Neutral D. Not applicable	
43	In order to be an effective engineer, one must pay closer and keen attention to minutest details.	
	A. True B. False C. Neutral D. Not applicable	го
44	Engineers do not require leadership as well as management skills.	10
	A. True B. False C. Neutral D. Not applicable	
45	Engineers know the value of time.	
	A. True B. False C. Neutral D. Not applicable	
46	mom is on the phone.	
	A. You B. Your C. You're D. Yours	
47	looking a lot better than you diD.	
	A. You B. Your C. You're D. Yours	
48	If in town, come by and see us.	
	A. You B. Your C. You're D. Yours	
49	If you do it again certain to get sent to the office.	
	A. You B. Your C. You're D. Yours	
50	Was it brother i saw last week?	
	A. You B. Your C. You're D. Yours	
51	I hope that happy in your new joB.	
<i>J</i> 1		
	A. You B. Your C. You're D. Yours	
52	I hope you get lots of presents on birthday.	
	A. You B. Your C. You're D. Yours	
53	not going out looking like that.	
	A. You B. Your C. You're D. Yours	
54	I'm coming over to house to sort this out.	
<i></i> -	A. You B. Your C. You're D. Yours	
55	Do you know where going?	
	A. You B. Your C. You're D. Yours	
56	The applause showed how deeply the presentation had the audience.	
	A. Affect B. Effect C. Affected D. Effected	
57	His attitude was by his upbringing.	
<b>5</b> 0	A. Affect B. Effect C. Affected D. Effected	
58	No matter what he does, it will have no on me.	
	A. Affect B. Effect C. Affected D. Effected	

No matter what he does, it will not \_\_\_\_\_ me.

	A. Affect	B. Effect	C. Affect	ed D. Ef	fected	
60	How was the	team	by t	he loss of their	coach?	
	A. Affect	B. Effect	C. Affect	ed D. Ef	fected	
61	What is the ty	pe of introducti	ion called, wh	nen it is require	ed to introduce	yourself in quick time frame?
	A. Self introd	luction B. Group	o introduction	C. Elevator in	ntroduction	D. None of these
62	Choose the be	est option which	suits the bes	t for profession	nal introduction	n.
	A. Dress appr	ropriately B. K	eep eye conta	act C. Be confi	dent D. All of	these
63	A non – form	ally prepared sp	beech is callel	D.		
	A. Extempore	e speaking B. P.	resentation C	. Debate	D. None of the	ese
64	Which of the	se element is no	t involved in	the process of	communication	n?
	A. Pipe B. Se	ender C. M	lessage	D. Channel		
65	Which of the	se is the third el	ement of com	munication?	×	0
	A. Sender	B. Reciver	C. Chann	el D. Mess	sage	
66	Which of the	se is the most in	nportant tool	of communicat	tion?	
	A. Body lang	uage B. Gestur	res C. Langua	age D. Postu	ure	
67	Which of the	se must be avoid	ded in any pre	esentation?		
	A. Proper gra	mmar B.	Complex wo	ords C. Short	sentences	D. Clear voice
68	Which of the	se is not importa	ant in an oral	presentation?		
	A. Words	B. Body lang	guage	C. Gesti	ures	D. Audience size
69	Which of the	se is the best wa	y to establish	a proper rappo	ort with audien	ce?
	A. Pointing fi	inger B. M	Making eye co	ontact C. Way	ing hands	D.standing erect
70	In an oral pre	sentation, the sp			-	-
	A. Panic	B. Pause	C Makin	g eye contact	D. Ins	nire
71		er among the fol			D. ms	phe
/1	A.77754	B. 70		2. 77784	D. 564	12
72		er among the fol			D. 30 <sup>2</sup>	+3
. –	A.762928	_		C. 19537455	D. No	ne of these
73		er among the fol				
, 5	A.4540074		· ·	C. 1793498	D. 574	0702
74	Which of the	following numb	oer is divisibl	e by 63?		
	A.492815	B. 4	107872	C. 5893407	D. 622	21628

75	Which number is d	livisible by 18?		
	A.52794	B. 432181	C. 1725516	D. None of these
				РТО
76	What is the unit dig	git in the product (36.	5 x 659 x 771)?	
	A.1	B. 2	C. 4	D. 6
77	What is the unit dig	git in 7105		
	a. 1	B. 5	C. 7	D. 9
78	How many 3-digit	numbers are complet	ely divisible 6?	
	a. 140	B. 150	C. 151	D. 166
79	(112 + 122 + 132 +	+ + 202) = ?		
	A. 398	B. 2485	C. 4232	D.1563
80	What is the unit dig	git in(795 - 358)?		, O
	A. 0	B.4	C. 6	D. 7
81	What will be remain	inder when 17200 is	divided by 18?	×0
	a. 17 B	3. 16 C. 1	D. 2	
82	When a number is remainder is 9. Wh A. 339	•	mainder is 11. When the	e same number is divided by 17, then  D. None of these
83	In a division sum, t	the divisor is 10 time	s the quotient and 5 tim	es the remainder. If the remainder is 46,
	what is the dividen A. 4236	d? B. 4036	C. 4336	D. 5336
84		ber by 357, we get 39	as remainder. On divid	ding the same number 17, what will be the
	remainder? A. 0	B. 3	C. 5	D. 11
85			remainder. What will th	ne remainder when the square of the
	number is divided 1 A. 0	by 5? B. 1	C. 2	D. 4
86	How many of the f		e divisible by 3 but not	by 9 ?
	2133, 2343, 3474,	4131, 5286, 5340, 63	36, 7347, 8115, 9276 C. 7	D. None of these
07	a. 5	B. 6		
87		•		in the numeral 856973 is
00	a. 973	B. 5994	C. 5973	D. 435
88		t number exactly div	•	D 2222100
	a. 111111	B. 11077	C. 100011	D. 2233109
89		number exactly divis	•	
	a. 88899	B. 99918	C. 45361	D. 98978
90	What is the unit dig			
	a. 1	B. 3	C. 7	D. 9
	Read the following (q91 – 100)	g passages and answe	r the questions given be The greening of the age	
	1. A visit to most	homes for the aged		econd visits are uncommon. The men and

women we see there are listless, unresponsive, and often incapable of performing simple tasks. They appear unmotivated, uninterested, and turned away from others. Their debilitated physical and emotional condition is not a necessary consequence of old age. Rather, it is the inevitable result of being treated like a passive object in an institutional setting.

- 2. Recently, two young researchers from yale university, ellen langer and judith rodin, decided to see whether they could reverse the debilitated condition of residents in one of these old-age homes (1976). Their sample consisted of 91 residents, aged 65 to 90, all well enough to be walking about. The investigators reasoned that the crucial psychological process missing in such institutions was taking responsibility for one's own decisions. To be an actor in life's drama, we must act, decide, and be responsible for the consequences. To let others decide for us is to lose the main ingredient in self-esteem and competence.
- 91 How are the residents of old age homes described in paragraph 1?

A. Healthy B. Sad C. Uncommon D. Weak, poor and troubled

92 According to the author, what is the reason for their poor condition?

A. Left out feel B. Uninterested C. Ill treated like a passive object D. None of these

93 (par. 2) what was the researchers' hypothesis; i.e., what idea was their research based on?

A. Improving self esteem B. Taking responsibility C. Less competence D. Change the condition of the poor

- 94 (par. 2) what is the main ingredient in self-esteem and confidence?
  - A. Act and decide B. Decision making C. Debilated condition D.none of these
  - **3.** Accordingly, about half of the participants in the study were randomly assigned to a situation in which they received instructions that emphasized the need for them to take more responsibility for caring for themselves and for improving the quality of life in the home. They were then asked to choose a plant from among a box of them as a present but they were told they had to care for it. In contrast, the second group of patients was given instructions that stressed the responsibility of the staff to provide good services for the residents. They were handed a plant as a present and informed that the nurses would water it for them.
  - **4.** The results of the enhanced sense of personal responsibility were dramatiC. On questionnaire ratings and behavioral measures, the experimental group ("i'll do it myself") showed significant improvement over the comparison group ("let george do it for you") on alertness, active participation, and general sense of well-being.
- 95 (par. 4) how did the researchers measure the results of the study?

A. Questionnaire ratings B. Behavioral measures C.questionnaire ratings and behavioral measures D. None of these

96 Which group improved more?

A. Experimental B. Comparison C. Both D. None of these

- 97 In what areas did the better group show improvement?
  - A. Alertness B. Active participation C. Sense of well being D. All of these
  - **5.** Eighteen months later, these positive results still persisted, as indicated by the nurses' higher ratings of the happiness, sociability, and vigor of the personally responsible group. But most startling of all, encouraging the residents to be responsible for themselves and their plants made them live longer! The overall death rate for the entire nursing home during an eighteen-month period prior to the experiment was 25 percent. Following the experiment, only 15 percent of the personally responsible residents died, compared to twice as many for the no-responsibility group.
  - **6.** In conclusion, psychological interventions of this kind not only improve mood and attitudes; they seem to affect the very process of life and death itself.
- 98 (par. 5) how were results 18 months later?

A. Results perished B. No change C. Results remained D. None of these

- What was the most surprising finding of the study?
  - A. None changed B. Residents became brave C. Their plants made them live longer

- D. None of these
- 100 Choose the correct conclusion from the options given below.
  - A. Residents can be changed
- B. Psychological interventions help residents
- C. People will not die

D. None of these

\*\*\*

**18EGH28** 

### Second Semester BE Degree Examination July 2021 (CBCS Scheme)

Time: 3 Hours Max Marks: 100 marks

**Sub: ENGLISH II** 

**Q P Code: 60011** 

**Instructions:** 1. Your answer should be specific to the questions asked.

- 2. write the same question numbers as they appear in this question paper.
- 3. Write Legibly

### Question Paper Version - A

### Answer all the questions

100X1=100

- 1 Employees desire professionals who do which of the following?
  - A. Treat others respectfully only when they deserve it
  - B. Speak their minds and talks over others
  - C. Listen actively, honor commitments, and seek help when needed
  - D. Discuss personal issues with coworkers
- 2 Your emails should be generally:

A. Brief and to the point, but well-written

B. Long and vague

C. Riddled with errors

D. Passage

- When you get a personal phone call in a meeting, you:
  - A. Ignore it and call them back later
  - B. Excuse yourself and take it outside briefly
  - C. Answer and have a loud conversation
  - D. None of the above
- 4 Unlike social etiquette, office and bussiness etiquette are primarly based on

A. Hierarchy and power

B. Personal relation

C. Common sense

- D. Option A and C
- Your friend from college joins your company in a superior role to you. How should you interact with her in the office?
  - A. Talk informally and don't take her seriously
  - B. Show jealousy
  - C. Break friendship ties and maintain only professional relationship
  - D. Treat her like a superior in the office and as a friend outside
- The key elements of presentation are:

A. Presenter B. The message and the medium

C. Duration and time D. All of the above

7 Topic identification is level one requirement for a formal presentation

A. Yes B. No

C. Maybe D. Both a and c

8 How many pumps does a proffesional handshake require?

A. 3 B. 4

C. 5 D. Two and a grab of the forearm

PTO

- 9 A text is more efficient than an email when letting someone know you are running behind.
  - A. True B. False
  - C. Maybe D. None of the above
- 10 Is the most important thing you must do before you leave a party?
  - A. Get business card from a new contact
  - B. Ask for a doggie bag
  - C. Say goodbye to the host
  - D. Both A and C
- What does the outdated term "turning the table" mean?
  - A. Talk to the person on your left side during the first course, and rotate sides after each course
  - B. Move the table to be closer to the dessert buffet
  - C. Change seating throughout the course of a dinner party
  - D. None
- During an in-person conversation, what percent of your message is delievered through your spoken words?

A. 7% B.38% C. 55% D. 43%

- When is the most gracious time to respond to an invitation?
  - A. Within 24 hours of receiving the invitation
  - B. Within one week of receiving the invitation
  - C. Anytime
  - D. Both A and C
- You can tell a lot about a person by their handshake. The double handshake, (where the person places their second hand on top of yours), is likely to be used by
  - A. Someone who tends to dominate in the meetings
  - B. Someone who is submissive
  - C. Someone who trusts you and wants you to trust them
  - D. None
- Eye contact is an important part of communication, and a lack of it can imply deception. To avoid staring at somebody, how can you naturally strike a balance?
  - A. When breaking eye contact, look to the left or to the right
  - B. Look down at the floor every 30 seconds or so
  - C. Look just past the person
  - D. None
- When you stand up to talk in front of a group of people, what can you do to exude confidence?
  - A. Strike a wide stance
  - B. Try to position a desk or table between you and your audience
  - C. Clasp your hands in front of you
  - D. Both A and B
- 17 Which of these signals suggest the person you are speaking to might not be telling the whole truth?
  - A. They make steady eye contact
  - B. They make frequent hand to face touches, including attempts to cover their mouth
  - C. They answer you fairly promptly
  - D. Both A and C
- You need to ask some tough questions about your team's performance, and you notice that your team leader's leg is shaking. Does that suggest?
  - A. He's feeling bored by the conversation
  - B. He's feeling jittery about your line of questioning
  - C. He is exuding confidence
  - D. None

19	While addressing a senion Do you take that to mean		our team about staf	fing changes, she sudden	enly crosses her arms.				
	A. She suddenly feels co		1						
	B. She's not sure what to			t is being proposed					
	D. None	C. She is feeling defenseless, and is trying to shut out what is being proposed D. None							
20	Using your hands while a lack of control. What v				husiasm and passion, to				
	A. "i'm open and clear" B. "i think i'm in trouble C. "i'm feeling over the								
21	D. None	1. 1.	,						
21	Listening means to response		-						
	A. True B. False		C. Maybe	D. None					
22	Which of these is not a s	tep in the listen	ing process?		0,				
	<ul><li>A. To stop talking</li><li>C. Misinterpreting</li></ul>	B. Rec D. Res	eiving ponding		250				
23	Which of these is the first	st step in the lis	tening process?	N					
		B. Receiving D. Responding		· O ·					
24	Which of these is the thir	rd step in the li	stening process?						
	A. Stop talking C. Responding	B. Inte D. Rec	rpreting eiving	DB.					
25	Is the last step of	of the listening	process.	7,					
	A. Receiving C. Responding		rpreting talking						
26	Hearing means perceiving	g with ears.	0						
	-	B. False	C. Maybe	D. None					
27	Which of these is not a t								
	A. Appreciative listening C. Focused listening	- ( )	B. Superficial list D. Musical listen	•					
28	Which of these types of	listening lacks	depth?						
	A. Appreciative listening		B. Superficial list	ening					
	C. Focused listening	,	D. Evaluative list	C					
29	In which of these types of	of listening, doe	es the listener feel g	grateful?					
	A. Superficial listening		B. Attentive lister	ning					
	C. Appreciative listening	5	D. Evaluative list	ening					
30	Which of these types of	listening is foll							
P	A. Focused listening C. Attentive listening		B. Evaluative list D. Empathetic lis	•					
31	In which of these, the lis	tener puts hims	elf in place of the	speaker?					
	A. Focused listening		B. Evaluative list	•					
22	C. Attentive listening	or brook a ana	D. Empathetic lis	tening					
32	Body language can make	-		D 33					
22	A. True B. False		C. Maybe	D. None					
33	Which of these is the stu A. Gestures	ay ana ciassific B. Speech style	•	unus :					
		D. Speech style D. Spoof	,						

34	Which of these is not ar	n element of the speakin	g technique?				
	A. Voice quality C. Appearance	<ul><li>B. Word stress</li><li>D. Correct tones</li></ul>					
35	Which of these means g	giving emphasis to a syl	lable				
	A. Voice quality C. Tone	B. Word stress D. Message	S				
36	Which of these factors is	is not involved in the de	termination of cor	rect tone?			
	A. Pitch C. Quality	B. Dressing style D. Strength					
37	Which of these is not a	type of tone?					
	A. Urgent tone C. Restrained tone	B. Serious tone D. Jumping tone					
38	Which of these tones re	present thoughtfulness?	•				
	A. Serious tone C. Happy tone	B. Urgent tone D. Outraged to		0,3			
39	Which of these tones is	an unemotional tone?		N.V.			
	<ul><li>A. Happy tone</li><li>C. Restrained tone</li></ul>	B. Outraged to D. Humorous		×O			
40	Tone is used w	hen speaker wants to bri	ing about a good i	mpression of her life.			
	A. Outraged C. Restrained	B. Reflective D. Urgent					
41	On is used in speaking	of things in motion.	0,				
	A. True B. Fals	e C. Ma	ybe	D. None			
42	Fill in the blank. The do	og sprang him.	(0)				
	A. On B. Upo	n C. In	D. Over	•			
43	Till is used for time.	N .					
	A. True B. Fals	e C. Ma	ybe	D. None			
44	Which of these comes immediately after the noun?						
	A. Adverb phrase C. Verb phrase	B. Adjective p D. Pronoun ph					
45	Which of these stateme	nts is false?					
	A. The subject should usually follow the verb.						
	<ul><li>B. The object usually comes after the verb.</li><li>C. When there is an indirect object and a direct object, the indirect precedes the direct.</li></ul>						
	D. When the adjective i	s used attributively it co	omes before the no	oun which it qualifies.			
46	Every statement must h	ave a subject and a					
	A. Noun	B. Verb	C. Predicate	D. Phrase			
47	Choose the correct state	ement.					
	A. Do not make friends. B. Do not make friends.						
	C. Do not make friends						
	D. Do not make friendly	y with selfish people.					
48	Choose the correct state A. She doesn't know th		arance				
	B. She doesn't know the	e reason of his disappea	rance.				
	C. She doesn't know the						
49	D. She doesn't know the Some students are		ocal alice				
マノ	A. Adapt		C. Adopt	D. Edent			

50	Father me not to	o go out in the c	old.		
	A. Advised	B. Advised	C. Ac	lvice	D. Advise
51	Fill in the blank. I advi	sed herd	lrink it.		
	A. Don't	B. Not to	C. To	not	D. To don't
52	Choose the correct stat	ement.			
	<ul><li>A. He obtained passing</li><li>C. He obtained passed</li></ul>		B. He obtaine D. He obtaine	d pass marks. ed passing mark.	
53	Choose the correct stat	ement.			
	A. Anil talks french we C. Anil speaks french	well.	B. Anil chats D. Anil talk f		Mar
54	Choose the correct stat A. The ship was drown C. The ship sank.			e ship drowned. he ship had sank	OPI
55	Choose the correct stat	ement			
	A. It is they who has to B. It is they who have C. It is them who has to D. It is them who have	to leave this place o leave this place	ce. ee.		·0
56	Fill in the blank.				
	Offerings made upon to A. Altar	ne B. Alt	ter	C. Altar	D. Alter
57	Which of the following A. A letter must be wri B. A letter must be cor C. A letter must be wri D. A letter must be pro	itten in one sing nplete in all resp tten in legible h	le paragraph. pects. andwriting.	30,	
58	Which of these is an ex	xample of courte	eous leave taking	g?	
	A. Yours sincerely C. Yours sincerely		ours sincerely,		
59	Where should the signs	ature of the writ	er be placed?		
	A. Above the courteou B. Below the courteou C. Next to the courteou D. On the envelope	s leave taking			
60	What is the information	n endorsed on th	ne envelope?		
	A. Name B. Address	s C. Name and	l address D.	Name and date	
61	In the following questi If 'air' is called 'green 'water' and 'water' is o	', 'green' is call	ed 'red', 'red' is	called 'sea', 'sea	' is called 'blue', 'blue' is called
K	A. Green C. Red	B. Air D. Pink			
62	In the following questi According to new term 'scorpio' means 'earth	ninology, 'aries'	means 'air', 'tar	urus' means 'ligh	t', 'libra' means 'water' and
	A. Aries	B. Taurus	C. Li	bra	D. Scorpio
63	Choose the word which	h is least like the	e other words in	the group.	
	A. Grenade C. Shotgun	B. Katana D. Rifle			РТО

64	Choose the word which is not similar to the other words in the group.  A. Peas  B. Cabbage  C. Spinach  D. Tomato											
65	Solve the following question and choose the correct alternative from the following. 1, 2, 3, 4, and 5 are sitting in row but not necessarily in that order. All of them are sitting in a row with their backs toward north. 3 is immediate right to 5 and 4 is immediate left to 1. Only 2 is between 1 and 5. Which of the following are at the extreme ends? A. 3, 4 B. 2, 5 C. 2, 1 D. 4, 5											
66	In the following If, in a language and 'five' is cal Then what is the	e, 'one' is ca led 'six'.	lled 'two'	, 'two		lled 'thi		ree' is o	alled 'fo	our', 'fo	our' is ca	lled 'five'
	A. Three	<b>B</b> . 1	Four	C.	Five		D. Six					
67	If 'dog' is called 'mongoose' is o								'snake'	is calle	d 'mong	oose',
	A. Lion D. Mongoose	B. Bison		C.	Snake	2			1	7	•	
68	Choose the wor A. Timor C. Rhodes	В. 3	east like tl India Borneo	ne othe	er wor	ds in the	e group.		0			
69 Choose the word which is not similar to the other words in the group.												
	A. Bonnet C. Dashboard		Fender Hubcap									
70	Read the following information to answer the given question.  Five brothers are standing in a row facing north.  Tony is not adjacent to bony or mony. Sony is not adjacent to bony. Tony is adjacent to dony. Dony is at the middle in the row.  Then, which pair is at the extreme ends?  A. Tony, dony  B. Dony, bony  C. Sony, mony  D. Mony, tony											
71	Read the following information to answer the given question.  There are seven monkeys sitting in a row - annie, bonnie, connie, donnie, earnie, fernie and genie.  Genie is to the right of donnie and to the left of bonnie.  Annie is on the right of connie.  Annie and donnie have one monkey between them.  Earnie and bonnie have two monkeys between them.  Donnie and fernie have two monkeys between them.  Who is on the immediate right of bonnie?											
	A. Donnie	`	Earnie		(	C. Geni	e		D. Fer	nie		
72	If 'blue' means 'black' means 'grey', then what	white', 'whi	te' means	'red',	'red'							
	A. Black	B. 1	Red		(	C. Whit	e		D. Ora	nge		
73	In the following The number/wo						accordii	ng to th	e follow	ing lett	er codes	:
	Number	9	8	7	'	6	5	4	3	2	1	0
	Letter	Q	U	I		С	K	L	Y	R	О	D
	13311728 A. OYYOOIRU C. OYYORIOU			YYOI								1

Number         9         8         7         6         5         4         3         2           Letter         Q         U         I         C         K         L         Y         R	1	0						
Letter Q U I C K L Y R	0							
	О	D						
08121993 A. DUROOQQY C. DOUROYQY D. DOUROYQQ								
75 Choose the word which is least like the other words in the group.		110						
A. Coconut B. Flax C. Castor D. Mustard								
76 Choose the word which is not similar to the other words in the group.								
A. Joey C. Gosling B. Filly D. Vixen	•							
Read the following information to answer the given question.  There are seven monkeys sitting in a row - annie, bonnie, connie, donnie, earnie, fernie and is to the right of donnie and to the left of bonnie.  Annie is on the right of connie.  Annie and donnie have one monkey between them.  Earnie and bonnie have two monkeys between them.  Donnie and fernie have two monkeys between them.  Who is exactly on the right of one that is exactly in the middle?	and ger	nie.						
A. Donnie C. Annie D. Genie								
Genie is to the right of donnie and to the left of bonnie.  Annie is on the right of connie.  Annie and donnie have one monkey between them.  Earnie and bonnie have two monkeys between them.  Donnie and fernie have two monkeys between them.  Who is on the second position from the left?  A. Annie  B. Bonnie  C. Connie  D. Donnie	Read the following information to answer the given question.  There are seven monkeys sitting in a row - annie, bonnie, connie, donnie, earnie, fernie and genie.  Genie is to the right of donnie and to the left of bonnie.  Annie is on the right of connie.  Annie and donnie have one monkey between them.  Earnie and bonnie have two monkeys between them.  Donnie and fernie have two monkeys between them.  Who is on the second position from the left?  A. Annie  B. Bonnie							
79 Technical writing is same as general writing.								
A. True B. False C. Maybe D. None								
80 Technical writing demands use of language.								
A. Figurative B. Poetic C. Factual D. Dramatic								
81 Which of these must be avoided in technical writing?								
A. Facts B. Grammar C. Punctuation D. Personal fe	eelings							
Which of these words is used in technical writing?								
A. Apex B. Top C. Slanting D. Bottom								
C. Slanting D. Bottom  83 Which of these is a technical word for slanting?								
A. Lateral B. Sloping C. Tilting D. Bent								

84	Familiar words must be used in technical writing.								
	A. True	B. False	C. Maybe	D. None					
85 86	A scientist gets A. Latin C. French Trigonometry i	s his special words B. Englis D. Italiar is a word.	h	guage					
	A. French C. Indian	B. Germa D. Greek							
87	Which of these	means bioscope?							
	A. Math	B. Science	ce	C. Cinema	D. Binoculars				
88	Electricity is de	erived from	language		0,				
	A. Indian	B. Greek	C. French	D. Italian					
89	Which of these	e reports are used in	business?		N.				
	A. Formal tech C. Personal rep			rmal reports sical reports	*O				
90	Which of these	forms is not used	to write a non-	formal report?					
	A. Filling in a C. Form of a le		B. App D. Mer	norandum					
91	A non- formal	report may be writ	ten by filling in	n a blank form.					
	A. True	B. False	C. May	be D. I	None				
92	In which of the	ese forms is a non-f	formal letter no	ot written?					
93	A. Filling in a C. Form of a m	nemorandum	D. Form	n of a letter nal of a notice ter is similar to a					
,,,	A. Friendly lett	ter I	B. Business letto. Notice						
94	-	m is almost like a le							
	A. True	B. False	C. May	be D. I	None				
95	Which of these	forms does a form	nal report not ta	ake?					
	A. Essay	B. Pampl	nlet	C. Friendly letter	D. Book				
96	Which of these	e is not a type of a r	eport?						
	A. Periodic	B. Progress	C. Trouble	D. Fancy					
97	Which of these A. Periodic rep	e reports contains in bort B. Progre		a routine nature? C. Trouble repor	t D. Laboratory repo				
98	Report	includes breakdov	vn of machiner	·y.					
	A. Feasibility	B. Periodic	C. Trou	ble D. l	Progress				
99	A summary is	of the origin	al report.						
	A. 2-5 percent	B. 5-10 p	ercent	C. 12-15 percent	t D. 15-20 percent				
100	An abstract is _	of the origin	-						
	A. 2-5 percent	B. 5-10 p	ercent	C. 6-12 percent ****	D. 7-13 percent				

**18EGH28** 

# Second Semester BE Degree Examination July 2021 (CBCS Scheme)

Time: 3 Hours	Max Marks: 100 marks
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**Sub: ENGLISH II** 

Q P Code: 60011

**Instructions:** 1. Your answer should be specific to the questions asked.

- 2. write the same question numbers as they appear in this question paper.
- 3. Write Legibly

D. On the envelope

		<b>Question Paper Ve</b>	rsion – B	0.5
Ans	wer all the questions			100X1=100
1	Fill in the blank. I advised her _	drink it.		.0
	A. Don't B. Not	to C. To r	not	D. To don't
2	Choose the correct statement.			
	<ul><li>A. He obtained passing marks.</li><li>C. He obtained passed marks.</li></ul>	B. He obtained D. He obtained		
3	Choose the correct statement.	Ω		
	<ul><li>A. Anil talks french well.</li><li>C. Anil speaks french well.</li></ul>	B. Anil chats from D. Anil talk free		
4	Choose the correct statement. A. The ship was drowned. C. The ship sank.		ship drowned. ship had sank	
5	Choose the correct statement A. It is they who has to leave th B. It is they who have to leave th C. It is them who has to leave th D. It is them who have to leave	nis place. is place.		
6	Fill in the blank. Offerings made upon the A. Altar	B. Alter	C. Altar	D. Alter
7	Which of the following statemen	nts is incorrect?		
P	A. A letter must be written in or B. A letter must be complete in C. A letter must be written in leg D. A letter must be properly pur	all respects. gible handwriting.		
8	Which of these is an example of	courteous leave taking?	?	
	A. Yours sincerely C. Yours sincerely	<ul><li>B. Yours sincerely,</li><li>D. Sincerely</li></ul>		
9	Where should the signature of the	ne writer be placed?		
	A. Above the courteous leave ta B. Below the courteous leave ta C. Next to the courteous leave ta	king		

10	What is the is	nformation	endorsed on the env	elope'?				
	A. Name I	B. Address	C. Name and addre	ess D. N	Vame and date			
11	If 'air' is call	led 'green',	on, choose the correct , 'green' is called 'recalled 'pink', then wha	d', 'red' is	called 'sea', 'sea	' is called 'blu	e', 'blue' is called	
	A. Green C. Red		B. Air D. Pink					
12	According to	new termi	on, choose the correct nology, 'aries' means What would an orga	s 'air', 'tau	rus' means 'ligh	t', 'libra' mear	ns 'water' and	
	A. Aries		B. Taurus	C. Lib	ra	D. Scorpio		
13	Choose the w	vord which	is least like the other	r words in t	he group.		$O_{\Omega}$	
	A. Grenade D. Rifle		B. Katana	C. Sho	otgun	, 1		
14		word which B. Cabl	is not similar to the coage C. S	other words Spinach	s in the group.	×O		
15	Solve the following question and choose the correct alternative from the following. 1, 2, 3, 4, and 5 are sitting in row but not necessarily in that order. All of them are sitting in a row with their backs toward north. 3 is immediate right to 5 and 4 is immediate left to 1. Only 2 is between 1 and 5. Which of the following are at the extreme ends? A. 3, 4 B. 2, 5 C. 2, 1 D. 4, 5							
16	If, in a languand 'five' is Then what is	age, 'one' i	of number 2?	is called 't	hree', 'three' is o	called 'four', '	four' is called 'five'	
	A. Three		B. Four C. F	Five	D. Six			
17			'lion' is called 'bisor rocodile', then which			, 'snake' is call	led 'mongoose',	
	A. Lion D. Mongoose	B. Biso	n C. S	Snake				
18	Choose the w A. Timor C. Rhodes	word which	is least like the other B. India D. Borneo	r words in t	he group.			
19		vord which	is not similar to the	other words	s in the group.			
	A. Bonnet C. Dashboard	d	B. Fender D. Hubcap					
20	Five brothers Tony is not a the middle in	s are standindjacent to the row. pair is at the	rmation to answer theng in a row facing no bony or mony. Sony the extreme ends?  B. Dony, bony D. Mony, tony	orth.		ny is adjacent t	to dony. Dony is at	

21	Read the following information to answer the given question.  There are seven monkeys sitting in a row - annie, bonnie, connie, donnie, earnie, fernie and genie.  Genie is to the right of donnie and to the left of bonnie.  Annie is on the right of connie.  Annie and donnie have one monkey between them.  Earnie and bonnie have two monkeys between them.  Donnie and fernie have two monkeys between them.  Who is on the immediate right of bonnie?										
	A. Donnie	B. Earni	e		C. Ger	ie		D. Fe	rnie		
22	'black' means 'white', 'v 'grey', then what is the o	rans 'green', 'green' means 'yellow', 'yellow' means 'orange', 'orar ns 'white', 'white' means 'red', 'red' means 'pink', 'pink' means 'bwhat is the color of human blood?  B. Red  C. White  D. Or						rown', '			
23	In the following question, choose the correct code form.  The number/word group in the question is to be codified according to the following letter codes:										
	Number	9	8	7	6	5	4	3	2	)	0
	Letter	Q	U	I	С	K	L	Y	R	О	D
24	A. OYYOOIRU C. OYYORIOU D. OYYOUIRO  In the following question, choose the correct code form. The number/word group in the question is to be codified according to the following letter codes (use the same table mentioned above)										
	Number	9	8	7	6	5	4	3	2	1	0
	Letter	Q	U	I	С	K	L	Y	R	O	D
25		<u> </u>		ROYÇ	QQ	he group					
26	C. Castor  D. Mustard  Choose the word which is not similar to the other words in the group.  A. Joey  B. Filly C. Gosling  D. Vixen										
27	Read the following information to answer the given question. There are seven monkeys sitting in a row - annie, bonnie, connie, donnie, earnie, fernie and genie. Genie is to the right of donnie and to the left of bonnie. Annie is on the right of connie. Annie and donnie have one monkey between them. Earnie and bonnie have two monkeys between them. Donnie and fernie have two monkeys between them.										
	Who is exactly on the right of one that is exactly in the middle?  A. Donnie B. Connie C. Annie D. Genie								РТО		

28	There are seve Genie is to the Annie is on the Annie and don Earnie and bon Donnie and fe	n monkeys sitting right of donnie are right of connie. In the have one month have two months have two months second position from B. Bonn	in a row - and to the left of the key between the keys between keys between the left?	nnie, bonnie, con of bonnie. them. n them.	nnie, donnie	, earnie, fernie and ger	nie.
•	C. Connie	D. Donr					
29		ing is same as gen	eral writing.				-
	A. True	B. False	C. M	aybe	D. None		1
30	Technical writ	ing demands	use of lan	guage.			( )
	A. Figurative	B. Poeti	c	C. Factual		D. Dramatic	
31	Which of these	e must be avoided	in technical v	vriting?		0,0	
	A. Facts	B. Gran	nmar	C. Punctuation	on	D. Personal feelings	
32	Which of these	e words is used in	technical writ	ting?			
	A. Apex		B. Top		X	O	
33	C. Slanting Which of these	e is a technical wo	D. Bottom	σ?			
	A. Lateral	B. Slopi		5.			
	C. Tilting	D. Bent		0			
34	Familiar word	s must be used in t	echnical writ	ing.			
	A. True	B. False	C. Maybe	D. N	one		
35	A scientist get	s his special words	s from la	anguage			
36	A. Latin C. French Trigonometry	B. Engli D. Italia is a word.					
	A. French C. Indian	B. Germ D. Gree					
37	Which of these	e means bioscope?					
	A. Math	B. Scier	ice	C. Cinema		D. Binoculars	
38		erived from					
	A. Indian	B. Greek	C. French	D. It	alian		
39		e reports are used i		0 1			
P	A. Formal tech C. Personal re	•		formal reports Iusical reports			
40	Which of these	e forms is not used	to write a no	on-formal report	?		
	A. Filling in a C. Form of a le		B. A <sub>2</sub> D. M	pp lemorandum			
41	A non- formal	report may be wri	tten by filling	g in a blank form	1.		
	A. True	B. False	C. M	aybe	D. None		
42	In which of the	ese forms is a non-	formal letter	not written?			
	A. Filling in a			orm of a letter	<b>5</b>		

43	A non- formal rep	ort written in	the form of a letter	r is similar to a	a	
	A. Friendly letter C. Complaint letter	er	B. Business letter D. Notice	ſ		
44	A memorandum i	s almost like a	ı letter.			
	A. True B	. False	C. Maybe	e	D. None	
45	Which of these fo	rms does a for	rmal report not tak	e?		
	A. Essay	B. Pam	phlet	C. Friendly l	etter D	). Book
46	Which of these is	not a type of a	a report?			
	A. Periodic B	. Progress	C. Trouble	D. Fan	icy	
47	A. Periodic report	B. Prog	information of a r gress report	C. Trouble		. Laboratory repo
48	Report in	cludes breakd	own of machinery.			2
49	A. Feasibility B A summary is		C. Troubl	e	D. Progre	SS
	A. 2-5 percent	_	) percent	C. 12-15 pe	ercent D	). 15-20 percent
50	An abstract is	of the orig	inal report.	-	1	
	A. 2-5 percent	B. 5-10	) percent	C. 6-12 perce	ent	D. 7-13 percent
51	Employees desire	professionals	who do which of	the following?		
	B. Speak their min	nds and talks o , honour comr	nitments, and seek	0	eeded	
52	Your emails should	ld be generally	y:			
	A. Brief and to the C. Riddled with e	_	ell-written	B. Lon D. Pas	ng and vague sage	e
53	When you get a po	ersonal phone	call in a meeting,	you:		
	A. Ignore it and ca B. Excuse yoursel C. Answer and ha D. None of the ab	If and take it o	outside briefly			
54	Unlike social etiq	uette, office a	nd business etique	tte are primari	ly based on	
	A. Hierarchy and C. Common sense	_		nal relation n A and C		
55	Your friend from in the office?	college joins y	your company in a	superior role	to you. Hov	w should you interact with he
P		ip ties and ma	ke her seriously intain only profess ne office and as a f		ship	
56	The key elements	of presentation	on are:			
	<ul><li>A. Presenter</li><li>C. Duration and ti</li></ul>	ime	B. The message a D. All of the above		m	
57	Topic identification	on is level one	requirement for a	formal presen	ıtation	
	A. Yes C. Maybe	B. No D. Botl	h A and C			

38	How many pu	mps does a pi	rofessional na	ındsnake requir	e?	
	A. 3	B. 4	C.	5	D. Two and a gra	ab of the forearm
59	A text is more	efficient than	n an email wh	en letting some	one know you are	running behind.
	A. True C. Maybe		B. False D. None	e of the above		
60	Is the most im	portant thing	you must do	before you leav	e a party?	
	A. Get busine B. Ask for a d C. Say goodby D. Both A and	loggie bag ye to the host		t		
61	What does the	outdated terr	n "turning the	e table" mean?		
	B. Move the ta	able to be clos	ser to the dess		ourse, and rotate	sides after each course
62	During an in-pwords? A. 7%	person conver B.38%	rsation, what p	percent of your D. 43%	message is delieve	ered through your spoken
63				nd to an invitati	on?	0
	A. Within 24 l B. Within one C. Anytime D. Both A and	nours of recei week of rece	ving the invit	ation	ORM	
64		_	-	handshake. Thely to be used b		ke, (where the person places
65	D. None	who is submiss who trusts you an important	sive and wants yo part of comm	ou to trust them		aply deception. To avoid staring
	A. When break B. Look down C. Look just p D. None	at the floor e	very 30 secon	ne left or to the ands or so	right	
66	When you star	nd up to talk i	n front of a g	roup of people,	what can you do	to exude confidence?
	A. Strike a wid B. Try to posit C. Clasp your D. Both A and	tion a desk or hands in fron		n you and your	audience	
67	A. They make	steady eye co frequent hand er you fairly p	ontact d to face touc		ing to might not b	e telling the whole truth?
68	You need to as leader's leg is				s performance, an	d you notice that your team
	A. He's feeling B. He's feeling C. He is exudi D. None	g jittery abou	t your line of			

69	While addressing a second Do you take that to m		your team about staffin	ng changes, she suddenly o	crosses her arms.		
	A. She suddenly feels cold						
	B. She's not sure wha		hands ying to shut out what is	s heing proposed			
	D. None	nsciess, and is ti	ying to shut out what is	s being proposed			
70		at would calm ro ar" ible"	communicate a range of ounded hand gestures sa	f meanings, from enthusia ny to you?	sm and passion, to		
7.1	D. None	1. 1.	,				
71	Listening means to re		-				
	A. True B. Fa		C. Maybe	D. None			
72	Which of these is not	a step in the list	ening process?		0,		
	A. To stop talking C. Misinterpreting		ceiving esponding		5		
73	Which of these is the	first step in the l	listening process?	N. V			
	<ul><li>A. Stop talking</li><li>C. Interpreting</li></ul>	B. Receiving D. Responding	g	*0			
74	Which of these is the	third step in the	listening process?				
	A. Stop talking C. Responding		terpreting eceiving	VIII.			
75	Is the last st	ep of the listenin	g process.				
	A. Receiving		terpreting				
	C. Responding		op talking				
76	Hearing means perce	iving with ears.	0,				
	A. True	B. False	C. Maybe	D. None			
77	Which of these is not	a type of listenii	ng?				
	A. Appreciative lister C. Focused listening	ning	B. Superficial listen D. Musical listening	•			
78	Which of these types	of listening lack	s depth?				
	A. Appreciative lister C. Focused listening		B. Superficial listen D. Evaluative listen	e			
79		es of listening, d	oes the listener feel gra	•			
	A. Superficial listening	ıσ	B. Attentive listenin	ıσ			
	C. Appreciative lister	-	D. Evaluative listen	•			
80	Which of these types	of listening is fo	llowed by skilled listen	ners?			
D	A. Focused listening C. Attentive listening		B. Evaluative listeni D. Empathetic lister	-			
81	In which of these, the A. Focused listening C. Attentive listening	-	nself in place of the spe B. Evaluative listen D. Empathetic lister	ing			
82	Body language can m	ake or break a sp	peech				
	A. True B. Fa	alse	C. Maybe	D. None			
83	Which of these is the	study and classis	fication of speech sound	ds?			
	<ul><li>A. Gestures</li><li>C. Phonetics</li></ul>	B. Speech sty D. Spoof	vle				

84	Which of these is not an element of the speaking technique?					
	A. Voice quality C. Appearance	B. Word stress D. Correct ton				
85	Which of these m	eans giving emphasis	to a syllable			
	A. Voice quality C. Tone	B. Wo D. Me	ord stress essage			
86	Which of these fa	ctors is not involved	in the determ	ination of co	rrect tone?	
	A. Pitch	B. Dressing st	yle			
	C. Quality	D. Strength				
87		not a type of tone?				
00	A. Urgent tone	B. Serious ton		ained tone	D. Jumping tone	
88	A. Serious tone	ones represent thought			D. Outroped tone	
	A. Serious tone	B. Urgent tone	е С. на	ppy tone	D. Outraged tone	00
89	Which of these to	nes is an unemotiona	l tone?			C
	A. Happy tone C. Restrained ton		traged tone morous tone			•
90	Tone is u	sed when speaker wa	nts to bring a	bout a good i	mpression of her lif	e.
	A. Outraged	B. Reflective	C. Restra	ained	D. Urgent	
91	On is used in spea	aking of things in mot	tion.			
	A. True	3. False	C. Maybe		D. None	
92	Fill in the blank.	The dog sprang	him.	0,		
	A. On E	3. Upon	C. In	D. Over	r	
93	Till is used for tir	ne.	-0	\ <b>.</b>		
	A. True	B. False	C. Maybe	)	D. None	
94	Which of these co	omes immediately after	er the noun?			
95	A. Adverb phrase Which of these st	B. Adjective patements is false?	hrase C.	Verb phrase	D.	Pronoun phrase
	A. The subject sh B. The object usu C. When there is	ould usually follow the ally comes after the wan indirect object and ctive is used attributive.	erb. a direct obje			
96	Every statement r	nust have a subject ar	nd a			
	A. Noun	B. Verb	C.	Predicate	D. Phrase	
97	Choose the correct	et statement.				
0	B. Do not make f. C. Do not make f.	riend with selfish peo riendship with selfish riends with selfish pe riendly with selfish pe	people. ople.			
98	B. She doesn't kn C. She doesn't kn	et statement.  How the reason for his above the reason of his above the reason at his above the reason with h	disappearance disappearance	e. e.		
99	Some students are A. Adapt	e at copying.  B. Adept	C.	Adopt	D. Edept	
100	Father me	not to go out in the co	old.			
	A. Advised	B. Advised	C.	Advice	D. Advise	

**18EGH28** 

# Second Semester BE Degree Examination July 2021

	(CBCS Scheme)
Tir	me: 3 Hours Max Marks: 100 marks
	Sub: ENGLISH II
	Q P Code: 60011
Inst	2. write the same question numbers as they appear in this question paper.  3. Write Legibly
	Question Paper Version – C
Ans	wer all the questions 100X1=100
1	In the following question, choose the correct code form.  If 'air' is called 'green', 'green' is called 'red', 'red' is called 'sea', 'sea' is called 'blue', 'blue' is called 'water' and 'water' is called 'pink', then what is the color of grass?  A. Green  B. Air  C. Red  D. Pink  In the following question, choose the correct code form.  According to new terminology, 'aries' means 'air', 'taurus' means 'light', 'libra' means 'water' and 'scorpio' means 'earth'. What would an organism breathe in?
	A. Aries B. Taurus C. Libra D. Scorpio
3	Choose the word which is least like the other words in the group.  A. Grenade B. Katana C. Shotgun  D. Rifle
4	Choose the word which is not similar to the other words in the group.  A. Peas B. Cabbage C. Spinach D. Tomato
5	Solve the following question and choose the correct alternative from the following. 1, 2, 3, 4, and 5 are sitting in row but not necessarily in that order.  All of them are sitting in a row with their backs toward north.  3 is immediate right to 5 and 4 is immediate left to 1. Only 2 is between 1 and 5.  Which of the following are at the extreme ends?  A. 3, 4  B. 2, 5  C. 2, 1  D. 4, 5
6	In the following question, choose the correct code form.  If, in a language, 'one' is called 'two', 'two' is called 'three', 'three' is called 'four', 'four' is called 'five' and 'five' is called 'six'.  Then what is the square of number 2?
7	A. Three B. Four C. Five D. Six If 'dog' is called 'lion', 'lion' is called 'bison', 'bison' is called 'snake', 'snake' is called 'mongoose', 'mongoose' is called 'crocodile', then which one is reared as pet? A. Lion B. Bison C. Snake D. Mongoose
8	Choose the word which is least like the other words in the group.
	A. Timor B. India C. Rhodes D. Borneo

Choose the word which is not similar to the other words in the group.

B. Fender

D. Hubcap

9

A. Bonnet C. Dashboard

**PTO** 

10	Read the following information to answer the given question.  Five brothers are standing in a row facing north.  Tony is not adjacent to bony or mony. Sony is not adjacent to bony. Tony is adjacent to dony. Dony is at the middle in the row.  Then, which pair is at the extreme ends?  A. Tony, dony  B. Dony, bony  C. Sony, mony  D. Mony, tony										
11	Read the following information to answer the given question.  There are seven monkeys sitting in a row - annie, bonnie, connie, donnie, earnie, fernie and genie.  Genie is to the right of donnie and to the left of bonnie.  Annie is on the right of connie.  Annie and donnie have one monkey between them.  Earnie and bonnie have two monkeys between them.  Donnie and fernie have two monkeys between them.  Who is on the immediate right of bonnie?										
12	If 'blue' means 'green', 'means 'white', 'white' means then what is the color of	eans 're	neans 'y d', 'red'		•	' means 'pink' n	_		ige' mea 'brown'		
13	In the following question, choose the correct code form.  The number/word group in the question is to be codified according to the following letter codes:										
	Number	9	8	7	6	5	4	3	2	1	0
	Letter	Q	U	I	С	K	L	Y	R	О	D
13311728 A. OYYOOIRU C. OYYORIOU D. OYYOUIRO  14 In the following question, choose the correct code form. The number/word group in the question is to be codified according to the following letter of same table mentioned above)					er codes	(use the					
	Number	9	8	7	6	5	4	3	2	1	0
	Letter	Q	U	I	C	K	L	Y	R	O	D
15 16 17	A. Coconut B. Flax C. Castor D. Mustard Choose the word which is not similar to the other words in the group. A. Joey B. Filly C. Gosling D. Vixen										

A. Donnie

C. Annie

B. Connie

D. Genie

18		itting in a row - anninie and to the left of mie. It monkey between the monkeys between to monkeys between the monkeys between	ie, bonnie, connie, donn bonnie. em. hem.	ie, earnie, fernie and genie.
19	Technical writing is same a A. True B. False	as general writing. C. May	ybe D. No	ne
20	Technical writing demands A. Figurative B.	use of langu Poetic	nage. C. Factual	D. Dramatic
21	Which of these must be avo	oided in technical wr	iting?	0
	A. Facts B.	Grammar	C. Punctuation	D. Personal feelings
22	Which of these words is use	ed in technical writing	ıg?	
	A. Apex C. Slanting	B. Top D. Bottom		×O
23		al word for slanting? Sloping Bent	De la	
24	Familiar words must be use	ed in technical writin	g.	
	A. True B. False	C. Maybe	D. None	
25		words from lan English Italian	guage	
26		rd. German Greek		
27	Which of these means biose	cope?		
	A. Math B.	Science	C. Cinema	D. Binoculars
28	Electricity is derived from	language		
	A. Indian B. Greek	C. French	D. Italian	
29	Which of these reports are	used in business?		
30	A. Formal technical reports C. Personal reports Which of these forms is no	D. Mu	ormal reports sical reports -formal report?	
	A. Filling in a blank form	B. App		
31	C. Form of a letter A non- formal report may b		morandum n a blank form	
	A. True B. False	C. May	ybe D. No	ne
32	In which of these forms is a A. Filling in a blank form	B. For	m of a letter	
33	C. Form of a memorandum A non- formal report writte		mal of a notice ter is similar to a	
	A. Friendly letter	B. Business let		
	C. Complaint letter	D. Notice		

34	A memorandum is alm A. True B. Fals		r. C. Maybe	ę	D. None	e
35 36	Which of these forms of A. Essay Which of these is not a	B. Pamphlet		e? C. Friendly le	etter	D. Book
	A. Periodic B. Pro		C. Trouble	D. Fano	су	
37	Which of these reports	contains infor	mation of a re	outine nature?		
	A. Periodic report	B. Progress		C. Trouble re	eport	D. Laboratory repo
38	Report include		•		D. D.	
39	A. Feasibility B. Peri A summary is o		C. Trouble report.	2	D. Prog	ress
	A. 2-5 percent	B. 5-10 perc	ent	C. 12-15 per	rcent	D. 15-20 percent
40	An abstract is of	f the original r	eport.			
	A. 2-5 percent	B. 5-10 perc	ent	C. 6-12 perce	ent	D. 7-13 percent
41	Employees desire profe A. Treat others respect B. Speak their minds a C. Listen actively, hon D. Discuss personal iss	fully only whe nd talks over o our commitme	en they deservothers ents, and seek	e it	eded	6 VJ.
42	Your emails should be	generally:				
	A. Brief and to the point C. Riddled with errors	nt, but well-wi	ritten	B. Long D. Pass	g and vag	gue
43	When you get a person	al phone call i	in a meeting,	you:		
44	A. Ignore it and call the B. Excuse yourself and C. Answer and have a D. None of the above Unlike social etiquette,	take it outsid loud conversa	tion	te are primarly	based o	n
	A. Hierarchy and power C. Common sense	er O	B. Person D. Option	al relation A and C		
45	Your friend from colle in the office? A. Talk informally and B. Show jealousy C. Break friendship tie D. Treat her like a supe	don't take he	r seriously	ional relations		ow should you interact with her
46	The key elements of pr	esentation are	:			
47	<ul><li>A. Presenter</li><li>C. Duration and time</li><li>Topic identification is</li></ul>	D. A	All of the abov			
P	A. Yes C. Maybe	B. No D. Both a an		_		
48	How many pumps does	_		equire?		
	A. 3 C. 5	B. 4 D. T		b of the forear	m	
49	A text is more efficient	than an email	l when letting	someone know	w you ar	e running behind.
	A. True	B. F				
	C. Maybe	D. N	None of the ab	oove		

- Is the most important thing you must do before you leave a party?
  - A. Get business card from a new contact
  - B. Ask for a doggie bag
  - C. Say goodbye to the host
  - D. Both A and C
- What does the outdated term "turning the table" mean?
  - A. Talk to the person on your left side during the first course, and rotate sides after each course
  - B. Move the table to be closer to the dessert buffet
  - C. Change seating throughout the course of a dinner party
  - D. None
- During an in-person conversation, what percent of your message is delievered through your spoken words?

A. 7% B.38% C. 55% D. 43%

- When is the most gracious time to respond to an invitation?
  - A. Within 24 hours of receiving the invitation
  - B. Within one week of receiving the invitation
  - C. Anytime
  - D. Both A and C
- You can tell a lot about a person by their handshake. The double handshake, (where the person places their second hand on top of yours), is likely to be used by
  - A. Someone who tends to dominate in the meetings
  - B. Someone who is submissive
  - C. Someone who trusts you and wants you to trust them
  - D. None
- Eye contact is an important part of communication, and a lack of it can imply deception. To avoid staring at somebody, how can you naturally strike a balance?
  - A. When breaking eye contact, look to the left or to the right
  - B. Look down at the floor every 30 seconds or so
  - C. Look just past the person
  - D. None
- When you stand up to talk in front of a group of people, what can you do to exude confidence?
  - A. Strike a wide stance
  - B. Try to position a desk or table between you and your audience
  - C. Clasp your hands in front of you
  - D. Both a and b
- Which of these signals suggest the person you are speaking to might not be telling the whole truth?
  - A. They make steady eye contact
  - B. They make frequent hand to face touches, including attempts to cover their mouth
  - C. They answer you fairly promptly
  - D. Both A and C
- You need to ask some tough questions about your team's performance, and you notice that your team leader's leg is shaking. Does that suggest?
  - A. He's feeling bored by the conversation
  - B. He's feeling jittery about your line of questioning
  - C. He is exuding confidence
  - D. None
- While addressing a senior member of your team about staffing changes, she suddenly crosses her arms. Do you take that to mean?
  - A. She suddenly feels cold
  - B. She's not sure what to do with her hands
  - C. She is feeling defenseless, and is trying to shut out what is being proposed
  - D None
- Using your hands while you talk can communicate a range of meanings, from enthusiasm and passion, to a lack of control. What would calm rounded hand gestures say to you?
  - A. "i'm open and clear"
  - B. "i think i'm in trouble"
  - C. "i'm feeling over the moon"
  - D. None

61	Listening means to resp A. True B. Fals		r request C. Maybe	D. None	
62	Which of these is not a		•		
	A. To stop talking C. Misinterpreting	B. rece D. Res	eiving sponding		
63	Which of these is the fi	rst step in the lis	stening process?		
64	A. Stop talking C. Interpreting Which of these is the th A. Stop talking C. Responding	_	erpreting		
<ul><li>65</li><li>66</li></ul>	A. Receiving C. Responding Hearing means perceiving	D. Sto	process. erpreting p talking		Obba
00	A. True	B. False	C. Maybe	D. None	0,0
			·	D. Ivolic	7.3
67	Which of these is not a A. Appreciative listenin C. Focused listening		g?  B. Superficial lister  D. Musical listenin		
68	Which of these types of	f listening lacks	depth?		
	A. Appreciative listening	ng	B. Superficial lister		
69	C. Focused listening In which of these types	of listening doe	D. Evaluative lister	_	
0)	A. Superficial listening	_	B. Attentive listeni		
	C. Appreciative listening		D. Evaluative lister		
70	Which of these types of	f listening is foll	owed by skilled liste	ners?	
71	A. Focused listening C. Attentive listening In which of these, the li A. Focused listening C. Attentive listening	istener puts him	B. Evaluative lister D. Empathetic lister self in place of the sp B. Evaluative lister D. Empathetic lister	ning peaker? ning	
72	Body language can mal			<i>5.</i> V	
72	A. True B. Fals		C. Maybe	D. None	
73	Which of these is the st	udy and classifi	cation of speech soul	ius?	
	A. Gestures C. Phonetics	B. Speech style D. Spoof	e		
74	Which of these is not an A. Voice quality C. Appearance	n element of the B. Word stress D. Correct tone			
75	Which of these means g	giving emphasis	to a syllable		
P	A. Voice quality C. Tone	B. Wo D. Mes	rd stress ssage		
76	Which of these factors	is not involved i	n the determination of	of correct tone?	
77	A. Pitch C. Quality Which of these is not a	B. Dressing sty D. Strength type of tone?	/le		
	A. Urgent tone C. Restrained tone	B. Serious tone D. Jumping ton			

/8		tones represent	•			
	A. Serious tone C. Happy tone	2	B. Urgent tone D. Outraged to			
79		tones is an uner	•			
80	A. Happy tone C. Restrained t	one s used when spea	B. Outraged to D. Humorous aker wants to br	tone	d impression	of her life.
	A. Outraged C. Restrained	B. Ref D. Urg				
81	On is used in sp	peaking of thing	s in motion.			
	A. True	B. False	C. Ma	ıybe	D. None	
82	Fill in the blank A. On	k. The dog spran B. Upon	g him. C. In	D. O	ver	C
83	Till is used for	time.				. 0
	A. True	B. False	C. Ma	rybe	D. None	NV
84	Which of these	comes immedia	tely after the no	oun?	×C	)
	A. Adverb phrase		B. Adjective p			
85	A. The subject B. The object C. When there	statements is fa should usually f usually comes aft is an indirect ob djective is used a	ollow the verb. ter the verb. ject and a direct			
86	Every statemen	nt must have a su	bject and a	2		
87	A. Noun Choose the cor	B. Ver	b	C. Predicate	D.	Phrase
88	B. Do not make C. Do not make D. Do not make Choose the cor A. She doesn't B. She doesn't C. She doesn't	e friend with self e friendship with e friends with se e friendly with s rect statement. know the reason know the reason know the reason know the reason	selfish people.  If ish people.  If ish people.  If or his disappea  If of his disappea  If at his disappea	earance. arance. arance.		
89		are at copy				
90	A. Adapt	B. Ade	•	C. Adopt	D.	Edept
	A. Advised	B. Adv		C. Advice	D.	Advise
91	Fill in the blank	k.I advised her _	drink it.			
	A. Don't	B. Not	to	C. To not	D.	To don't
92	Choose the cor	rect statement.				
	A. He obtained C. He obtained	passing marks. passed marks.		obtained pass mobtained passin		

93 Choose the correct statement. B. Anil chats french well. A. Anil talks french well. C. Anil speaks french well. D. Anil talk french well. 94 Choose the correct statement. A. The ship was drowned. B. The ship drowned. C. The ship sank. D. The ship had sank 95 Choose the correct statement A. It is they who has to leave this place. B. It is they who have to leave this place. C. It is them who has to leave this place. D. It is them who have to leave this place 96 Fill in the blank. Offerings made upon the \_ D. Alter A. Altar B. Alter C. Altar 97 Which of the following statements is incorrect? A. A letter must be written in one single paragraph. B. A letter must be complete in all respects. C. A letter must be written in legible handwriting. D. A letter must be properly punctuated. 98 Which of these is an example of courteous leave taking? A. Yours sincerely B. Yours sincerely, C. Yours sincerely D. Sincerely 99 Where should the signature of the writer be placed? A. Above the courteous leave taking B. Below the courteous leave taking C. Next to the courteous leave taking D. On the envelope 100 What is the information endorsed on the envelope? A. Name B. Address C. Name and address D. Name and date

#### ADICHUNCHANAGIRI UNIVERSITY

**18EGH28** 

## Second Semester BE Degree Examination July 2021 (CBCS Scheme)

Time: 3 Hours Max Marks: 100 marks

**Sub: ENGLISH II** 

**Q P Code: 60011** 

**Instructions:** 1. Your answer should be specific to the questions asked.

- 2. write the same question numbers as they appear in this question paper.
- 3. Write Legibly

#### Question Paper Version - D

#### Answer all the questions

100X1=100

1 Read the following information to answer the given question.

There are seven monkeys sitting in a row - annie, bonnie, connie, donnie, earnie, fernie and genie.

Genie is to the right of donnie and to the left of bonnie.

Annie is on the right of connie.

Annie and donnie have one monkey between them.

Earnie and bonnie have two monkeys between them.

Donnie and fernie have two monkeys between them.

Who is on the immediate right of bonnie?

A. Donnie

B. Earnie

C. Genie

D. Fernie

If 'blue' means 'green', 'green' means 'yellow', 'yellow' means 'orange', 'orange' means 'black', 'black' means 'white', 'white' means 'red', 'red' means 'pink', 'pink' means 'brown', 'brown' means 'grey', then what is the color of human blood?

A. Black

B. Red

C. White

D. Orange

3 In the following question, choose the correct code form.

The number/word group in the question is to be codified according to the following letter codes:

Number	9	8	7	6	5	4	3	2	1	0
Letter	Q	U	I	C	K	L	Y	R	O	D

13311728

A. OYYOOIRU C. OYYORIOU B. OYYOIROU D. OYYOUIRO

4 In the following question, choose the correct code form.

The number/word group in the question is to be codified according to the following letter codes (use the same table mentioned above)

Number	9	8	7	6	5	4	3	2	1	0
Letter	Q	U	I	C	K	L	Y	R	О	D

08121993

A. DUROOQQY

B. DUOROQQY

C. DOUROYQY D. DOUROYQQ

- 5 Choose the word which is least like the other words in the group.
  - A. Coconut

B. Flax

C. Castor

D. Mustard

PTO

	A. Joey C. Gosling	B. Filly D. Vixen		
7	Read the following info There are seven monke Genie is to the right of	ormation to answer the ys sitting in a row - and donnie and to the left o	nie, bonnie, connie, donni	ie, earnie, fernie and genie.
	Annie is on the right of Annie and donnie have Earnie and bonnie have	one monkey between t two monkeys between	them.	
	Donnie and fernie have Who is exactly on the r. A. Donnie	•		
	C. Annie	D. Genie		
8	Read the following info	ormation to answer the ys sitting in a row - an donnie and to the left o	nie, bonnie, connie, donn	tie, earnie, fernie and genie.
	Annie and donnie have Earnie and bonnie have Donnie and fernie have	one monkey between t two monkeys between two monkeys between	them.	N.
	Who is on the second p A. Annie	B. Bonnie		
9	C. Connie Technical writing is san	D. Donnie		
10	A. True B. Fals Technical writing dema			one
	A. Figurative	B. Poetic	C. Factual	D. Dramatic
11	Which of these must be A. Facts	e avoided in technical w B. Grammar	riting?  C. Punctuation	D. Personal feelings
12	Which of these words i	s used in technical writ	ing?	C
	A. Apex C. Slanting	B. Top D. Bottom		
13	Which of these is a tecl	nnical word for slanting	:?	
	A. Lateral C. Tilting	B. Sloping D. Bent	,	
14	Familiar words must be	e used in technical writi	ng.	
	A. True B. Fals	se C. Maybe	D. None	
15	A scientist gets his special. Latin C. French	cial words from la B. English D. Italian	ınguage	
16	Trigonometry is a	word.		
0	A. French C. Indian	B. German D. Greek		
17	Which of these means	hioscope?		
1 /	A. Math	B. Science	C. Cinema	D. Binoculars
18	Electricity is derived fr	om language		
19	A. Indian B. Gre Which of these reports		D. Italian	
	A. Formal technical rep C. Personal reports		formal reports usical reports	

Choose the word which is not similar to the other words in the group.

6

21	A. Filling in a blank form C. Form of a letter A non- formal report may	B. App D. Memo	orandum	
22	A. True B. False In which of these forms i	C. Maybo s a non-formal letter not		
	A. Filling in a blank form C. Form of a memorandu		of a letter ll of a notice	
23	A non- formal report wri	tten in the form of a letter	is similar to a	
24	A. Friendly letter C. Complaint letter A memorandum is almost	B. Business letter D. Notice t like a letter.		Ma
	A. True B. False	C. Maybe	D. None	
25	Which of these forms do A. Essay	es a formal report not tak 3. Pamphlet		D. Book
26	Which of these is not a ty A. Periodic B. Progr	ess C. Trouble	D. Fancy	V, N,
<ul><li>27</li><li>28</li></ul>		ontains information of a r B. Progress report preakdown of machinery.	C. Trouble report I	D. Laboratory repo
	A. Feasibility B. Period			ess
29	A summary is of t	he original report.	00'	
	A. 2-5 percent	3. 5-10 percent	C. 12-15 percent I	D. 15-20 percent
30	An abstract is of the A. 2-5 percent	ne original report.  3. 5-10 percent	C. 6-12 percent	D. 7-13 percent
31	Employees desire proffes A. Treat others respectfu B. Speak their minds and C. Listen actively, honor D. Discuss personal issue	lly only when they deserve talks over others commitments, and seek l	ve it	·
32	Your emails should be go A. Brief and to the point,		B. Long and vagu	ıe
22	C. Riddled with errors	1 11:	D. Passage	
33	When you get a personal A. Ignore it and call then B. Excuse yourself and ta C. Answer and have a lot D. None of the above	back later lke it outside briefly	you:	
34	Unlike social etiquette, o A. Hierarchy and power C. Common sense	B. Persor D. Option	nal relation n A and C	
35	Your friend from college in the office?	Joins your company in a	superior role to you. Ho	w should you interact with her
36	<ul><li>A. Talk informally and d</li><li>B. Show jealousy</li><li>C. Break friendship ties a</li><li>D. Treat her like a superi</li><li>The key elements of pres</li></ul>	and maintain only profess or in the office and as a f		
	A. Presenter C. Duration and time	B. The message a D. All of the above		PTO

37 Topic identification is level one requirement for a formal presentation A. Yes B. No C. Maybe D. Both a and c 38 How many pumps does a proffesional handshake require? A. 3 B. 4 C. 5 D. Two and a grab of the forearm 39 A text is more efficient than an email when letting someone know you are running behind. A. True B. False C. Maybe D. None of the above 40 Is the most important thing you must do before you leave a party? A. Get business card from a new contact B. Ask for a doggie bag C. Say goodbye to the host D. Both A and C What does the outdated term "turning the table" mean? 41 A. Talk to the person on your left side during the first course, and rotate sides after each course B. Move the table to be closer to the dessert buffet C. Change seating throughout the course of a dinner party D. None 42 During an in-person conversation, what percent of your message is delievered through your spoken words? A. 7% B.38% C. 55% D. 43% When is the most gracious time to respond to an invitation's 43 A. Within 24 hours of receiving the invitation B. Within one week of receiving the invitation C. Anytime D. Both A and C You can tell a lot about a person by their handshake. The double handshake, (where the person places 44 their second hand on top of yours), is likely to be used by A. Someone who tends to dominate in the meetings B. Someone who is submissive C. Someone who trusts you and wants you to trust them D. None Eye contact is an important part of communication, and a lack of it can imply deception. To avoid staring 45 at somebody, how can you naturally strike a balance? A. When breaking eye contact, look to the left or to the right B. Look down at the floor every 30 seconds or so C. Look just past the person D. None When you stand up to talk in front of a group of people, what can you do to exude confidence? 46 A. Strike a wide stance B. Try to position a desk or table between you and your audience C. Clasp your hands in front of you D. Both a and b Which of these signals suggest the person you are speaking to might not be telling the whole truth? A. They make steady eye contact B. They make frequent hand to face touches, including attempts to cover their mouth C. They answer you fairly promptly D. Both A and C You need to ask some tough questions about your team's performance, and you notice that your team 48 leader's leg is shaking. Does that suggest? A. He's feeling bored by the conversation

B. He's feeling jittery about your line of questioning

C. He is exuding confidence

D. None

49	While addressing a sen Do you take that to me. A. She suddenly feels of B. She's not sure what C. She is feeling defense	an? cold to do with her ha	ands		nly crosses her arms.
50 51	D. None Using your hands while a lack of control. What A. "i'm open and clear B. "i think i'm in troub C. "i'm feeling over the D. None Listening means to resp	would calm rou "le" e moon"	nded hand gestures s		usiasm and passion, to
<i>J</i> 1	A. True B. Fals		C. Maybe	D. None	
52	Which of these is not a		•	211,0110	
53	A. To stop talking C. Misinterpreting Which of these is the fi		ponding		30
54	A. Stop talking C. Interpreting Which of these is the th	B. Receiving D. Responding	ctaning process?	×O'	
54		•			
	A. Stop talking C. Responding	B. Inte D. Rec	erpreting	Dla.	
55	Is the last step	of the listening	process.	) '	
	A. Receiving C. Responding		rpreting p talking		
56	Hearing means perceiv	ing with ears.	0		
	A. True	B. False	C. Maybe	D. None	
57	Which of these is not a	type of listening	<del>2</del> ?		
	A. Appreciative listening C. Focused listening	ng	B. Superficial lister D. Musical listenin		
58	Which of these types o				
	<ul><li>A. Appreciative listening</li><li>C. Focused listening</li></ul>	ng	<ul><li>B. Superficial lister</li><li>D. Evaluative lister</li></ul>		
59	In which of these types	of listening, doe			
	A. Superficial listening C. Appreciative listening		B. Attentive listening. Evaluative lister	_	
60	Which of these types o	f listening is foll	owed by skilled lister	ners?	
0	A. Focused listening	C	B. Evaluative listen		
61	C. Attentive listening In which of these, the l	istanar nuts him	D. Empathetic liste	•	
01	A. Focused listening	istenei puts iiinis	B. Evaluative listen		
62	C. Attentive listening Body language can mai	ke or break a spe	D. Empathetic liste eech	ning	
63	A. True B. Fals Which of these is the st		C. Maybe cation of speech sour	D. None nds?	
	A. Gestures C. Phonetics	B. Speech style D. Spoof	2		

64	Which of these is not an A. Voice quality C. Appearance	n element of the speakin B. Word stress D. Correct tones	g technique?		
65	Which of these means g A. Voice quality C. Tone	B. Word stress D. Message			
66	Which of these factors is	is not involved in the de	termination of co	rrect tone?	
	A. Pitch C. Quality	<ul><li>B. Dressing style</li><li>D. Strength</li></ul>			
67	Which of these is not a A. Urgent tone C. Restrained tone	type of tone?  B. Serious tone  D. Jumping tone			
68 69	Which of these tones re A. Serious tone C. Happy tone Which of these tones is	B. Urgent tone D. Outraged to		20×	
	A. Happy tone	B. Outraged to	one	K, P.	
70	C. Restrained tone Tone is used what A. Outraged	D. Humorous then speaker wants to bridge.  B. Reflective		mpression of her life.	
71	C. Restrained On is used in speaking	D. Urgent			
71	A. True B. Fals		ybe	D. None	
72	Fill in the blank. The do A. On B. Upo		D. Over		
73	Till is used for time.	~	2		
	A. True B. Fals	e C. Ma	ybe	D. None	
74	Which of these comes i A. Adverb phrase C. Verb phrase	mmediately after the no B. Adjective p D. Pronoun ph	hrase		
75	Which of these statemes	nts is false?			
76	A. The subject should u B. The object usually co C. When there is an ind D. When the adjective i Every statement must h	omes after the verb. irect object and a direct s used attributively it co	omes before the no	-	
	A. Noun	B. Verb	C. Predicate	D. Phrase	
77	Choose the correct state A. Do not make friends B. Do not make friends C. Do not make friends D. Do not make friendly	ement. with selfish people. hip with selfish people. with selfish people.			
78	Choose the correct state	ement.			
79	A. She doesn't know th B. She doesn't know th C. She doesn't know th D. She doesn't know th Some students are	e reason of his disappear e reason at his disappear e reason with his disapp	rance.		
	A. Adapt	B. Adept	C. Adopt	D. Edept	
80	Father me not to	•	ı	ı	
	A. Advised	B. Advised	C. Advice	D. Advise	

81	Fill in the blank. I advised A. Don't B	her dri . Not to	nk it. C. To not	D. To don't
82	Choose the correct statemed. He obtained passing ma		obtained pass marks.	
83	C. He obtained passed man Choose the correct statement	rks.	D. He obtained passing mark	<b>.</b>
84	A. Anil talks french well. C. Anil speaks french well Choose the correct stateme		<ul><li>B. Anil chats french well.</li><li>D. Anil talk french well.</li></ul>	
85	A. The ship was drowned. C. The ship sank. Choose the correct stateme		B. The ship drowned.  D. The ship had san!	
	A. It is they who has to lea B. It is they who have to le C. It is them who has to le D. It is them who have to	eave this place ave this place.		W.30.
86	Fill in the blank. Offerings made upon the _ A. Altar	B. Alte	r C. Altar	D. Alter
87	Which of the following sta	atements is inc	correct?	
88	A. A letter must be writter B. A letter must be comple C. A letter must be written D. A letter must be proper Which of these is an exam	ete in all respe n in legible har ly punctuated.	cts. ndwriting.	
	A. Yours sincerely C. Yours sincerely	B. You D. Sinc	rs sincerely, erely	
89	Where should the signatur	e of the writer	be placed?	
90	A. Above the courteous le B. Below the courteous lea C. Next to the courteous le D. On the envelope What is the information er	ave taking eave taking	envelope?	
	A. Name B. Address (	C. Name and a	nddress D. Name and date	
91	'water' and 'water' is called	green' is called		rea' is called 'blue', 'blue' is called
92	In the following question, According to new termino 'scorpio' means 'earth'. W	logy, 'aries' n That would an	neans 'air', 'taurus' means 'li organism breathe in?	ght', 'libra' means 'water' and
93	A. Aries B Choose the word which is	. Taurus least like the	C. Libra other words in the group.	D. Scorpio
	A. Grenade B D. Rifle	. Katana	C. Shotgun	
94	Choose the word which is	not similar to	the other words in the group.	
	A. Peas B. Cabbag D. Tomato	ge	C. Spinach	PTO

95	1, 2, 3, 4, and 5 All of them are	are sitting in sitting in a ro right to 5 and	row but not nec w with their bac 4 is immediate	correct alternati essarily in that o eks toward north left to 1. Only 2 ds? D. 4, 5	order. 1.	J	
96	In the following If, in a languag and 'five' is cal Then what is th	e, 'one' is call lled 'six'.	ed 'two', 'two' umber 2?	is called 'three'		led 'four', 'four	' is called 'five
97	A. Three If 'dog' is calle 'mongoose' is	d 'lion', 'lion'	is called 'bisor		led 'snake', 'sı	nake' is called '	mongoose',
	A. Lion D. Mongoose	B. Bison	C. S	Snake			( )
98	Choose the wor A. Timor C. Rhodes	B. In		words in the gr	oup.	0.5	
99	Choose the wor			other words in the	ne group.	NV	
	A. Bonnet C. Dashboard		ender ubcap		X	0	
100	Read the follow Five brothers at Tony is not adjuthe middle in the Then, which pa A. Tony, dony C. Sony, mony	re standing in accent to bony he row. ir is at the ext B. D	a row facing no or mony. Sony	rth.	6/11.	is adjacent to do	ony. Dony is at
		0.01	202	****			

#### **ADICHUNCHANAGIRI UNIVERSITY**

#### **18MAT11**

#### First Semester BE Examination July 2021

#### (CBCS Scheme)

Time: 3 Hours Max Marks: 100 marks

#### **Sub: Engineering Mathematics - I**

Q P Code: 60002

**Instructions:** 1. Answer **five full** questions.

- 2. Choose one full question from each module
- 3. Your answer should be specific to the questions asked.
- 4. write the same question numbers as they appear in this question paper.
- 5. Write Legibly

#### Module - 1

- 1 a With the usual notation prove that  $\tan \phi = r \left( \frac{d\theta}{dr} \right)$  .
  - b Find the angle between the curves  $r = 2\sin\theta$ ,  $r = \sin\theta + \cos\theta$  7 marks
  - Find the radius of curvature of  $x^3 + y^3 = 3axy$  at  $\left(\frac{3a}{2}, \frac{3a}{2}\right)$

#### OR

- 2 a Show that the pair of curves  $r=a(1+\cos\theta)$  and  $r=b(1-\cos\theta)$  intersect each other orthogonally .
  - b Find the Pedal equation for the curve  $r^n = a^n(\cos n\theta)$  7 marks
  - Show that  $\frac{\rho}{r}$  is constant for the equiangular spiral  $r = ae^{\theta\cot\alpha}$

where a and lpha are constants.

#### Module – 2

- 3 a Find the Macluarin's series for **tanx** upto the term  $x^4$ 
  - b Find  $\frac{\partial(u,v,w)}{\partial(x,y,z)}$  if  $u=x+3y^2-z^3$ ,  $v=4x^2yz$ ,  $w=2z^2-xy$
  - c Evaluate  $\lim_{x \to 0} \left( \frac{a^x + b^x + c^x + d^x}{4} \right)^{\frac{1}{x}}$  7 marks

#### Or

- 4 a Expand log(secx) upto the term  $x^4$  using Macluarin's series.
  - b Prove that  $x \frac{\partial u}{\partial x} + y \frac{\partial u}{\partial y} + z \frac{\partial u}{\partial z} = 0$  if  $u = f(\frac{x}{y}, \frac{y}{z}, \frac{z}{x})$ .
  - c Evaluate  $\lim_{x \to 1} \left[ \frac{x}{x-1} \frac{1}{\log x} \right]$  7 marks

6 marks

6 marks

#### Module – 3

a Evaluate:  $\int_0^1 \int_{\gamma}^{\sqrt{x}} (x^2 + y^2) dy dx$ . 5

6 marks

Evaluate  $\iint xy \, dx \, dy$  on changing the order of integration.

7 marks

Prove that  $\beta(m,n) = \frac{\Gamma(m)\Gamma(n)}{\Gamma(m+n)}$ 

7 marks

Or

6 Evaluate  $\int_{-\infty}^{\infty} \int_{-\infty}^{\infty} \int_{-\infty}^{\infty} (x^2 + y^2 + z^2) dx dy dz.$ 

6 marks

Find the area enclosed by the ellipse  $\frac{x^2}{a^2} + \frac{y^2}{h^2} = 1$ .

7 marks 7 marks

Prove that  $\int_{0}^{\frac{\pi}{2}} \sqrt{\sin \theta} \ d\theta \int_{0}^{\frac{\pi}{2}} \frac{d\theta}{\sqrt{\sin \theta}} = \pi$ 

Module – 4

7 a Solve:  $(4xy + 3y^2 - x)dx + x(x + 2y)dy = 0$  6 marks

b Find the orthogonal trajectories of the family of astroids  $x^3$ 

7 marks

A body in air at  $25^{\circ}$  C cools from  $100^{\circ}$  C to  $75^{\circ}$  C in 1 minute. Find the temperature of the body at the end of 3 minutes.

7 marks

**Solve:**  $(x^2 + y^2 + x)dx + xydy = 0$ 8

6 marks

Find the orthogonal trajectories of the family  $y^2 = cx^3$ 

7 marks

Show that the equation  $xp^2 + px - py + 1 - y = 0$  is Clairaut's equation, hence obtain the general and singular solution.

7 marks

9 а Find the Rank of a Matrix  $A = \begin{bmatrix} 2 & -1 & -3 & -1 \\ 1 & 2 & 3 & -1 \\ 1 & 0 & 1 & 1 \end{bmatrix}$ 

6 marks

Solve the following system of equation by Gauss elimination Method 2x + y + 4z = 12, 4x + 11y - z = 33, 8x - 3y + 2z = 20.

7 marks

Diagonalize the matrix  $A = \begin{bmatrix} 4 & 1 \\ 2 & 3 \end{bmatrix}$  and hence find  $A^6$ .

7 marks

Solve the following system of equation by Gauss Seidel Method 10

6 marks

5x + 2y + z = 12, x + 4y + 2z = 15, x + 2y + 5z = 20. Carry out 3 iterations. Using Rayleigh's power method find the largest Eigen value and Eigen vector,

7 marks

with initial Eigen vector  $\begin{bmatrix} 1 & 0 & 0 \end{bmatrix}^T$ . given 0 2 0

Test for consistency and solve

7 marks

5x + 3y + 7z = 4, 3x + 26y + 2z = 9, 7x + 2y + 10z = 5.

#### ADICHUNCHANAGIRI UNIVERSITY

#### 18PHY12/22

#### First/Second Semester BE Examination July 2021

#### (CBCS Scheme)

Time: 3 Hours Max Marks: 100 marks

#### **Sub: Engineering Physics**

#### Q P Code:60003/60013

**Instructions:** 1. Answer **five full** questions.

- 2. Choose one full question from each module
- 3. Your answer should be specific to the questions asked.
- 4. write the same question numbers as they appear in this question paper.
- 5. Write Legibly

#### Module - 1

- What are Ultrasonic, subsonic, acoustic, transonic, supersonic and hypersonic waves. 1 6 marks
  - What are damped oscillations? Give the theory and discuss the case of under damping 10 marks
  - A free particle is executing SHM in a straight line. The maximum velocity it attains 4 marks during any oscillation is 62.8 m/s. Find the frequency of oscillation, if its amplitude is 0.5 m.

#### OR

Define simple harmonic motion. Give the characteristics of SHM. 2

6 marks

Explain the construction and working function of Reddy shock tube. Mention any four applications of shock waves.

10 marks

The distance between two pressure sensors in a shock tube is 150 mm. The time taken by a shock wave to travel this distance is 0.3 ms. If the velocity of sound under the same conditions is 340 m/s, find the Mach number of the shock wave.

4 marks

#### Module - 2

Explain the stress and strain. Explain the nature of elasticity with the help of stress-3 8 marks strain diagram

b Derive an expression for the Young's modulus Y of the material of a single cantilever.

8 marks

Calculate the force required to produce an extension of 1 mm in steel wire of length 2 m and diameter 1 mm. (Given: Young's modulus for steel  $Y = 2.1x10^{11} \text{ N/m}^2$ ).

4 marks

#### Or

- 4 State and explain Hooke's law. Define Young's modulus, Bulk modulus and Rigidity 8 marks modulus.
  - Derive the relation between Bulk modulus, Young's modulus and Poisson's ratio. 8 marks Discuss the limiting values of Poisson's ratio.
  - c Calculate the angular twist of a wire of length 0.3 m, and radius  $0.2x10^{-3}$  m when a 4 marks torque of  $5 \times 10^{-4}$  Nm is applied. Rigidity modulus of the material  $8 \times 10^{10}$  N/m.

#### Module-3

5	a	Define the Unit cell and Primitive cell. Derive an expression for inter planar distance in terms of Miller indices	10 marks
	b	Derive an expression for Numerical aperture in terms of R.I of core and cladding.	6 marks
	c	The refractive indices of core and cladding are 1.50 and 1.48 respectively in an optical fiber. Find the numerical aperture and angle of acceptance.	4 marks
		Or	
6	a	Explain with neat diagram the different types of optical fiber with suitable diagram.	6 marks
	b	Define APF. Calculate the atomic packing factor for SC BCC and FCC.	10 marks
	c	Inter planar distance for a crystal is 2.5 Å and the glancing angle for third order spectrum was observed to be equal to 5 <sup>0</sup> 30°. Find the wavelength of the X-rays used.	4 marks
		Module – 4	
7	a	Obtain an expression for time independent Schrodinger wave equation.	8 marks
	b	Derive an expression for energy density under the condition of thermal equilibrium in terms of Einstein's co-efficient.	8 marks
	c	Compute the first 3 permitted energy values for an electron in a box of width 0.4nm.	4 marks
		Or	
8	a	Explain the construction and working function of semiconductor diode laser with the help of energy level diagram	8 marks
	b	Define wave function. Find the energy eigen values for an electron in one dimensional potential well of infinite height.	8 marks
	c	The average output power of laser source emitting a laser beam of wavelength 0.6328 nm is 5 m W. Find the number of photons emitted per second by the laser source.	4 marks
		Module – 5	
9	a	Explain the failures of classical free electron theory. Discuss the merits of quantum free electron theory.	8 marks
	b	What are dielectrics. Explain different types of dielectric Polarization.	8 marks
	c	The Fermi level in Silver is 5.5 eV. Find the velocity of conduction electrons in Silver and also mean free path. Given relaxation time is $3.97 \times 10^{-14}$ s.	4 marks
		Or	
10	a	Define electric polarization? Derive the expression for clasius Mossotti equation	8 marks
	b	Define Fermi energy. Explain the variation of Fermi factor at T=0 K and T>0 K with diagram.	8 marks
	c	Calculate the probability of an electron occupying an energy level 0.02 eV above the Fermi level at 200 K and 400 K in a metal	4 marks
		****	

\*\*\*\*

Mu. Aruna, B Pg NO.2 Module-1 Aust. professor Digital tundamental Dept of ECE, BGISTT. there con four number systems of anothrelic Number System! that are used in the digital rystems: i) Decimal number system 2) Binavey number rychem 3) Heradecimal number ujukm 4) Octal Number ryetem. Radin number for: 1) Binary in '2' = ( )2 2) octal is '8' = () 8 3) decimal "os 10' = ()10 4) Henadecimal "15" 16" = ( )16 Binary number rystem: \* Binary number system is a system that contain only two digita i.e on & I's \* of on a base 2 number system. \* Binary digita are also called 'Bits'. octal number system. a octal rystem is a regetem that contain 8 digita lie 0 to 7

- \* The number wer 0, 1, 2, 3, 4, 5, 6.
- \* It is bare 8 number system.

Decimal Number Lystem.

- -> There are the nystem that contain 10 digits [0-9] i.e 0,1,2,3 H5 6789
  - -> It is bare 10 number ryckm.

Hexadecimal Number system.

- -> there are the system contain 16 digits [0-15] i.e 0 to 9 and A to F with base 16.
- 7 numerals 10,11,12,13,14,15 au supremnted by A, B, C, D, E, F suspectively flunce its called alpha-numerals.

Note Binary => ban 2 = 0'n & 1's octal => baus => 0 to 7 Delimal => base 10 => 0 to 9 Henadecemal => bam 16 => 0 to 15 (0 to 9; A to F) A toF) Relationship blu Decimal, Binary octal & Hera decimal numbers.

recorre			
Decemal 0 to9 bar 10	Binwy  6's & 1's  base 2 (8,421)	0000 (010%) ban 8	Henodecimal (0 to 15) bou 16
0	0000	. 0	0
1	· · · · · · · · · · · · · · · · · · ·	2	2
2	0010		3
3	0100	4	4
FB 5	0 1 0 1	11 / 1	5
6,	0,1,10,	6	6
7. ( 10)	1.0.11.1	7	7
8	1000	10	. 8
9	1001	11.	111. 9
10.	1010	, 12	A
11	1011	. 13	В
12	1,100	भ १ <b>। प</b> ार्	to and
13	1 1 0 1	1 1, 15	D
14 /	1:110	16	E
15	1/1/	17	Harris of F
16	10000	20	10

### Notes

Bits: A Lingle digit in the binary number is Nibble: A group of 4 bits is called Nibble Byte: A group of 8 bits is called bytes. word: A group of 16 bits is called word Double: A group of 32 bits in called double word.

## Convenion.

## 1) Benavy to Decemal

+ To convert Binary to Decemal number, by multipling each bit in the binary numbers by binary made n of 2 mained to the positions

\* The queut of each multiplication in expressed as a decemal number.

\* each individual decemal number are added to obtain the decimal equivalent of the Binavy numbers.

#### Problems\_ C111110100)2 -> ( ) 10

Solution.

$$= 2^{8} \times 1 + 2^{7} \times 1 + 2^{6} \times 1 + 2^{5} \times 1 + 2^{4} \times 1 + g^{3} \times 0 + 2^{2} \times 1 + 2^{6} \times 1 + 2^$$

with traction.

In this case there in a decemal point.

$$-\left(g^{7}x1 + g^{6}x1 + g^{5}x1 + g^{4}x0 + g^{3}x1 + g^{2}x0 + g^{1}x1 + z^{8}x1\right) \cdot \left(g^{-1}x1 + g^{2}x0 + g^{-1}x1 + g^{2}x1\right)$$

$$= (128 + 64 + 32 + 8 + 2 + 1) \cdot (0.5 + 0 + (0.195) + 0.000)$$
$$= (235 \cdot 6875)_{10}$$

# Decimal to Binary Conversions:

- convenion of decimal to binary in done by supreceded devision of the decimal number by binary radias.

\* The decemal number is supecitedly divided by 2. The gumainder becomes the bits of the equivalent benavy numbors.

\* The que-mainder of the 1st divinion operation -n yeilds the least significant bits (LSB) & the final number is the most significant bit (ms B).

$$\frac{Problems}{0(500)_{10}} > (?)_{2}$$

$$\frac{9|500}{2|250-0}$$

$$\frac{125-0}{2|31-0}$$

$$\frac{15-1}{2|3-1}$$

$$\frac{1}{2} = \frac{1}{3} = \frac{1}{3}$$

with traction:

$$\begin{array}{c|cccc}
2 & 13 & 1 & 1 \\
2 & 6 & -1 & 1 \\
2 & 3 & -0 & 1 \\
\hline
1 & -1 & 1 & 1
\end{array}$$

$$\Rightarrow (1101)_{2}$$

$$\frac{0.6875 \times 2}{1.3750} \longrightarrow 1$$

$$0.375 \times 2$$

$$0.750 \times 2$$

$$1.5 \longrightarrow 1$$

$$0.5 \times 2$$

$$1.0 \longrightarrow 1$$

(13.6875) (1101.1011) g

Binary to Heradecimal:

\* Binavy number au converted to heradecimal numbers by dividing the binary number into group of 4 bits.

\* To make H bith we can add o'n to uffment.

problems.

$$0001|111|0100)_{2} \Rightarrow (?)_{16}$$

$$0001|1111|0100$$

$$= 0001|1111|0100$$

$$= |FH| \Rightarrow (1FH)_{16}$$
in bactions.

$$9(11010001.1001)2 = (1000 (D1.98)1000) = (10100001).1000 (D1.98)1000$$

Heradecimal to Binary.

\* To convert from heraderimal to binary num - bers quequires H bits bissary numbers with is to be inserted in place of each henanumbers.

\* each mumbe numerals of the hexanumbers becomes a H bit binary numbers.

0 (30E2FAI) 16 => (?)2

=> 3 D E 2 F. A 4 1 Leading 0011 1101 1110 0010 1111 1010 0001.

2 500% regrected

(11110111100010111110100001)2

with traction.

(FA 245.1A)10=(?)2

=> F A 2 H 5 · 1 A V Trailing Zero V Trailing Zero (nealected) ineglected.

Binary to octal convencion: \* we know that bour for octal Ps & & bour for

\*> we require 3 bit to suprement octal number. so that By grouping a digit. 3 bits of binary number and then converting each group bits to its octal equivalent.

Problems.

(HADH5/A)(A

 $(1101110011)^{5} \Rightarrow ()8$ 

2000 => (1563) 8

with fraction.

@ 4 1110011011·10)2 => ( ) 8

=> (001 110 011 011 100 add zerio. to make 3 bit group.

 $=(1633.4)_{8}$ 

octal to Binary Convouion.

\* conversion from octal to binary, it is the survey process of Binary to octal.

-ally convented to its binary equivalent to get the equivalent behavey octal to binary octal to binary convenient behavey octal to binary convenient of humbers.

### Problems:

with traction.

$$0 (125.53)_{8} \Rightarrow (?)_{2}$$

$$\frac{1}{001} \frac{9}{010} \frac{5}{101} \cdot \frac{5}{101} \cdot 011$$

# octal to Henadecimal.

\* comout octal number to its binary equivalent by converting each digit of octal to 9th equivalent 30 three bit binasy number.

\* convert binary numbers to its equivalent henaderimal by grouping Four bit and convert it to its heradecemal number.

Problems.

$$\frac{P_{roblems}}{0.001508} = (?)16$$
=> 6 | 1 | 5 \rightarrow octal
=> 10 | 001 | 101 \rightarrow Binary.

with tractions.

Henaderimal to Octal conversion:

\*) convert heranamber to its binary number.

\* convert Binavy numbers to its equivalent octal.

Problems

Finally.

(150A.0258)16

## Decimal to Henadecimal;

De convoiting a decimal number into a heruderimal involves repeated steps of dividing a decimal

+ At each step the decimal remainder is number by madin 16.

replaced with its equivalent henanumbers.

\* The sumainder of the tirust division step is LSB of the heranumber and remainder of

last division step en the MSB digit of henarum

-ben.

problems. ① (5386)10 ⇒ (?)16

=> 16 5386 ⇒ (150<u>10</u>)

16 21 - 0 => (150A)16

with fraction.

(5386.3H50)10 ⇒(?)16

\_0.345 X16

16 5386 2.070

2 21-0 0.070X16 05.520 ⇒ 5

0.52 0 X16 => (150A)16 08.32

 $=(0.258)_{16}$ 

Henadecimal to Decimal.

\* convousion from hera to decimal is begin by converting each heranumber into its decimal

\* couch clumal number in multiplied by hera nadix

16 naised to its position powers.

\* individual decimal number tou added to to obtain the decemal equivalent of the hera

-devimal number.

Problems.

= 5 X164+13X163+14X162+12X16+10X16

- 32+680 + 53248 + 3584+192+10

= (384714)10

Ø (3E.4F-C)10=> (?)10

= (3×16'+14×16°). (4×16'+15×162+12×103)

= (H8+14). (0.25+0.0585+1.46 XID3

 $=(62.31005)_{10}$ 

[A→10, B→11, C→12, D→13 巨 ->14, F->15].

### Binary compliment.

- 1 one's complements
- 1 Two's complements.

one's complements: The one's complement of a binway number is the binary number that susults when we change all I's to o's and all o's to I's.

Eg: Find in complement of (11010100)2.

Any: (00101011)2

Two's complements! Two's complement of a binary num - berto is the binary number that swellts when we change all i's to o's and all o's to i's and add I to I's complement.

(OR)

- \*) To Find Two's complements.
- >> Find I'm complement for given number.
- -> Add I to the I'm complement number.
- Eg: Find 2'n complement tor (11000100) 2

$$\Rightarrow 00111011 \rightarrow 1' \land complement$$

$$+ 1 \rightarrow Add 1$$

$$0011100 \rightarrow 2' \land complement.$$

# Binary Arithmatic Operation.

Arithmatic operation can be classified

into two types.

- 1 Addition
  - @ Subtraction.

# 1) Binavy Addition.

Digital computer performs various authmatic operation. The most basic operation is the addition of two binary roambber bits.

The rimple addition consits of 4 possible

combination.

\* Addition of two bits in called Half addition. \* The addition of three bits is called full addition

[A B C Sum Cases

	A	B	c	Sum	caro	<u>"</u>
	0	0	0	0	0	- [
	0	0	1/	1 /	0	
1	0	1	0	1/	O	
1	0	1	1/	0	I	1
	11	0	0	1 /	0	li .
1	1	0	1	0	1 1	

1	1	0	0	1	- fue
1	1	1	l	1	-> fue addit
					1

# Binary Addition is of 2 types.

- 1) unsigned number addition
- D) signed number addition.

unsigned number addition: unsigned benavy humbers are positive numbers and thus do not require an authmetic sign.

+ An m-bit unsigned number supresents all numbers in the range 0 to 2m-1.

\*For example, the sauge of 8 bit unsigned benowy numbers is from 0 to 255 10 in decimal and from 00 to FF16 in heradecimal.

1 perform addition of (11001100) & & (11011010) 2 are a second of the solution. 11011010

[1] 10000110

1) perform addition of (110010)2 & (111001)2

solution-

10010 11001

[010101] Cavin

3 perform addition of (001001)2 & (101100)2 3 solut 001001)2 110101 signed number addition. signed benavy numbers are both positive and negative number. it suquius tre or -re sign to supresent signed number. The most significant bit of binavy number is med to represent sign bit. i.e if MSB is 0 then number is tre binavy if MSBin I then number in -ve binary number. Problem addition of 1 portorm (+28)10 and (+15)10. (15)10 => (1111)2 solut" (28)10 => (11100)2 (+28)10=>0011100 (+15)10 => DDD1111 (+43)10 01011

Binary Subtraction.

Binauy subtraction is performed with the help of I's complement and D's complements.

a) Binavy subtraction wing i's compliment:

In i's complement subtraction, -ve number is quepresented in the i's complement form and add with the number to get the desired output smult i've A-B.

Steps:

1. Take I's complement of B

2. qualt = A + 1's complement of B.

3. If caviny is generated, then add caviny to great to get the actual result.

(a) Add (15) in [-28] 10  
(+15) 
$$_{10} = 0 | 1 | 1 |$$

resification.

The susult will be in the form of I's complement.

To voily take i's complement.

$$(28) \qquad \Box \qquad (-13)_{10} \qquad \Box \qquad (10010) \qquad (+13)_{10} = \boxed{0} \qquad 0 \qquad (1101) \qquad (+13)_{10} = \boxed{0} \qquad 0 \qquad (1101) \qquad (+13)_{10} = \boxed{0} \qquad 0 \qquad (-13)_{10} \qquad (-13)_{10} \qquad (-13)_{10} = \boxed{0} \qquad 0 \qquad (-13)_{10} \qquad (-13)_{10}$$

Binavy subtraction wing 2's complement In 2's complement subtraction take the 2's complement for -ve number and add with tre number to get desirred result.

re A-B.

Steph.

1) take 2's complement of B.

2. Hesult = 2's complement of B+A.

3. If caving in generated, neglect the caving.

Problems.

2's complement for (+19)10=> II 1100 Iscomple # 1 add 1.

101101

carry.

```
Verification.
       (+9)10 0 1 00 1
         = 1 \times 2^{3} + 0 \times 2^{2} + 0 \times 2^{3} + 1 \times 2^{6}
          = 8+1
     (+9)_{10} = (+9)_{10}
(+15)10 and (-28)10
A= (+15)10 => 0 1111
B= (+28),0 => 0111100
                              0 |
                              III 000 11 1's complement.
    2's comparent of B =>
                                       +1 add 1
                              100000 30% complement
                                             of B.
    (+15)0 => [ [ ] 1 1 1
     (-98)_{10} \Rightarrow \boxed{100100}
                  1 0011
   (-13)_{10}
 Voiticution: The sweet is in 2's complement. To
  verily take 2's complement for queult.
   (-13)10 => II 1
```

(+13)10 => 10 0 1 1 00 -> 1's complement.

neglect the cavey.

6
Voification. The result is in 2's complement to 3  Voification. The result is in 2's complement. to 3  Voify take 2's complement.  [H3) 10 > [] 0 1 0 1 0 1
+43). voity take 2's complemen.
II 010101
10 1010 -> 10 companies
- 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
10 10 10 11 311 × 91 + 2° X 1
$(+43)_{10} = 1 \times 2^5 + 0 \times 2^4 + 1 \times 2^3 + 0 \times 2^2 + 1 \times 2^4 + 2^{\circ} \times 1$
$(+43)_{10} = 1 \times 2 + 0 \times 4$ $= 32 + 8 + 9 + 1$
= 32 + 8 + 2 + 1
=(+H3)10
Po .
Review of logic gate.
Review of logic gar.  * The binary logic used in the digital systems  the binary logic used in the digital systems
* The binary logic values either 'High' or Low!  assumes only two values either 'High' or Low!
assumes only two
There two logic states supresents true for I's
false for o. higher voltage represents binavy I
To bengey logic.
and the lower voitage repract
i.e Hegh Cl
Low = o(for ov)
Logic operation.
The three basic logic operations are
a vot linvoitor
D NOT l'invertor
DAND DOR.

They con three basic logic gates.

NOT gales: " The inversion for complementary or negation) operator is written as a ban over its origument.

+ The logic gate which perform inversion operation is called involves or NOT gate.

\* The invoiter changer one logic level (1 or 0) to eta opposite levello ori).

\* The bubble in the symbol indicates the inversion operation.

symbol of NOT gate.

 $A \circ A \circ y = \overline{A}$ 

Trulk	terple.
input	output
A	Y=A
0	

AND gates.

\* AND gates performs logical multiplication. it is denoted by 'x' or .. re AxB or A.B.

\* AND gates output es high when both the inputs are high. its output is low when any one of the input is low.

\* It may have two or more inputs, and a single eutput.

symbol of AND gate.

$$A \longrightarrow Y = A \cdot B$$

Truth table.

	A	В	Y= A·B
T	0	0	O
	0	1	D
	1	0	D -
	1	ı	

#### DR gate:

Addition. it is \* OR gate performs logical

denoted by '+' . i.e A+B.

\* OR gate output is high when any one of the input is high and its output is low when both the inputs are low.

\* It may have two or more inputs and a single

Dutput.

Symbol of OR gate.

$$A \longrightarrow y = A + B$$

Trulk table.

A	В	Y=A+B
0	0	0
0	1	1 /
<u>.</u> 1 .	0	
1	1	1

Note: NAND and NOR

gater au called universal gates.

MANG BOOK

NAND and NOR gates une called as universal gater wing there two gater it in possible to realize all the rumaing gates such as AND, DR NOT, EN-NOR & EN-OR or any combination of these

NAND gate . NAND Ps a combencation of NOT & AND

\* NAND gate l's a complemented output of AND gate. \* Its output is high when any one of the input is gates Low and ets output is low when boths the Enputs are

symbol of NAND gate.  $A = \bigcup_{B} y = A \cdot B = A^{\alpha} \bigcup_{B} \bigcup_{A \cdot B} y = A \cdot B$ 

	Tro	ulh-	table.
	A	B	Y=A·B
۱,	0	0	1
)	0	11	_1
	1	0	
,	١	1	0

NOR gate: \* NOR is a combination

of NOT 8 OR gates. \* NOR gate Ps a complemented output of OR gate.

\* Its output is high when both the inputs are low and its output is low when any one of the Enpert is high.

Truth table.

A B 14= A+B

Symbol of NOR gate.

A Do  $y = \overline{A+B} \Rightarrow B$ B

Symbol of NOR gate.  $y = \overline{A+B}$ 

A	В	1 4= A+B
0	0	1
0	1	0 /
<b> </b>	0 /	0
1 1	1/	0

other gates: available other gates one x-or and x-NOR. x-OR or En-OR gate.

\* An XOR gate (Exclusive - OR gate). It has 2 or more Poputs & one output.

4 The output of XOR gate her in high when any One of the Priput Ps high. If boths the Priput is lows to if both the input is high then output is low.

symbol of xor

ADY

 $A \longrightarrow \bigcup_{B} G = A \oplus B$   $y = A \oplus B$   $y = A \oplus B$ 

B
J

X-NOR or En-NORgate.

\* its also called Euclivive - NOR gate, It has 2 or more inputs and only one output.

\* It's logically equivalent to an Ex-OR gate followed by an inverter.

\* The output of XNOR gate is high when both the enputs we high or both the inputs are low and output is low when any one of the input is high.

## symbol of XNOR

$$\begin{array}{c}
A & \longrightarrow \\
B & \longrightarrow \\
\end{array}$$

$$\begin{array}{c}
Y = \overline{A} \overline{B} + AB \\
0 & \longrightarrow \\
Y = \overline{A \oplus B}$$

$$\begin{array}{c}
111 \\
\hline
\end{array}$$

Truth	table.

A	B	y=7	(A)
0	0 /	1	
101	1	0	1
1/1	1	1	

\* Boolean algebra is a branch of mathematics that deals Boolean Algebra with operations on logical values with binary variables.

- \* Boolean variables are represented as bonary numbers
  - to supreunt high (1) = true and Low(0) = false.
  - \* George Boole en 1854 invented Boolean Algebra.

## Rules of Boolean Algebra.

O hown of Addition

$$A + A = A$$

other reels.

\*> A+AB= A+B

\* (A+B)(A+C) = A+BC

\*) A + AB = A.

War Land Fr

1 Laws of multiplification.

$$A \cdot 0 = 0$$

$$A \cdot 1 = A$$

3 Laws of complementation.

$$\overline{\overline{A}} = A$$

### Properties of Boolean Algebra!

ii 
$$A \cdot B = B \cdot A$$

① AMOCICLIVE properly

(i) 
$$A+(B+c)=(A+B)+c$$

(ii)  $(AB)c=A(Bc)$ 

$$\rightarrow A(B+c) = AB+AC$$

Proof(1) A +B = B+A ② A.n

A B A+BI

A B A+BI

A B A+BI

O O

Λ	B	200	-		
	D	1778	B++	A.B	B.A
O	0	O	n	n	10
0	1	}	li	0	0
1	0	1		0	0
1	1	1 -	1		1
		LHS	RHS	LHS	RHS

$$A = A \cdot B = A \cdot A$$

- 1 Associative property.
- (a) A + (B+c) = (A+b) + c
- (b) A. (B.C) = (A.B) C

Amociative property State that it maker no changes in what order the variable are grouped for OR & AND operation.

Proof.

/ Y	-ool	-			LHS		RHS
	A	B	c	B+C	A +(B+c)	A+B	(A+B)+C
	0	0	0	0	0	0	0.
	Ô	0	1	1	1	0 /	! - / :-
	0	ı	ט	1	1 /	!	1 /
4	0	0 0	1 0 1 0	1 . D	1		1
	_1_	1			1 1 2	1.000	ita pr

LHS = RHS hence its proved my A(Bc)=(AB)c can be proved.

3) Distributive property:

3)	016				1 4	. 6 p	<b>-</b> 1				
8 <del>7</del> 5	۸	ſη.	+ C)	= A	B+A	CLHS	RHS			7 - 7 - 7 - 7 - 7 - 7	
15	- I	-		AC	B+0	A(B+C)	AB.	+AC			
H	B		1110	110	5,0	1100	10		, 1-8	45 = RF	15
	0	0	0	0	10	0		1	. 1,5	- 1 100	1.
0			0	10	1 4 4	0	0	4 - 1	11.0	er ifs 1	groved.
0	0	1			1 1		0		nun	$\alpha$ , ,	
0	1	0	10	13	1	10	<b>Q</b> )	tor			
The Division of the Control of the C		9	10	10	1-10	10	0				
0	11	1	10	0	0	0	0				
1	0	10	10	1	1	1	Lx				
) 1	0	1 1	1	0	1 .						
1 ,	11	0	1:	1 %	1	12,024	Time I	2011			
1.	11	11	-1			A CONTRACTOR OF THE PARTY OF TH	A A	1 26 04		No. of the same	

### Demorganh theorem:

State and prove Demorganh theorem. Demorgan's 1st theorem

Statement: The complement of a product is equal ) AB = A+B to the sum of the complements.

to M					LHS	RHS
ornal.	IA	В	AB	AB	AB	A+B
proof.	10	b	0	1 /-1	_ 1	,! /
+	0	1	0	1/0/		1 1
9-)		0	0	0101	0	0
4 3.357 - 1	1			0101		- 1, -

: LHS = RHS Hence ets proved.

pemorgan's and shiorem.

statement: The complement of a product is equal to the man of the complements.

ĩ	A	1 B	A+B	Ā	B	A+B	A.B	•
1	7.5		-	ī	01	4 7	i L	H
	.0	0	0		0	6	0/	
	O	1	1	۱۰.	,	0	0	
	1	0	1	0		0	0	*
-	1 2	-1	1.	01	01	U SUPELI		-

LHS=RHS unu ets proved

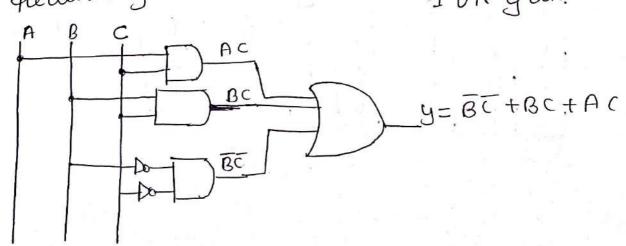
Simplification and qualization of Boolean expression using gater and NDND gates.

Problem O simplify the given boolean expression and qualize wing basic gates.

We assume 
$$Y = (B+\overline{c})(B+C) + (\overline{A}+B+\overline{C})$$

= 
$$(B+\overline{C})(\overline{B}+C)+\overline{\overline{A}}\cdot\overline{B}+\overline{\overline{C}}$$
 [:Demorganishing overn]

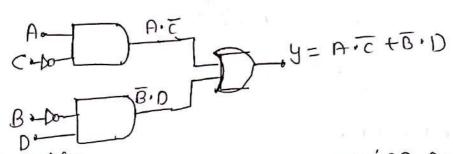
To qualize y = BC + BC + AC, we need 3-AND gate.



Simplifica W cussume 
$$y = [\overline{A} + c)(B + \overline{D})$$
  
 $-+ion$ .

 $= [\overline{A} + c] + (B + \overline{D})$   
 $= [\overline{A} + c] + (B + \overline{D})$   
 $= [\overline{A} \cdot \overline{C} + \overline{B} \cdot \overline{D}]$   
 $= A \cdot \overline{C} + \overline{B} \cdot \overline{D}$ 

Medization.



Hote torall the problem. My 1th simplify the boolean enpression and Realize

wing basic gate:

#### Simplification.

$$\frac{y = A(1+c)}{y = A}$$

$$A - \bigcup_{OY} - y = A$$

$$A - \bigcup_{OY} y = A$$

$$A - \bigcup_{OT} A - \bigcup_{O\overline{A}} y = A$$

Realizath

$$= A(A+B) + \overline{A}(A+B)$$

$$=\overline{A}C+\overline{A}+\overline{C}$$

h. 
$$\overline{AB+\overline{AB}+A} = \overline{AB} \cdot \overline{\overline{AB}} \cdot \overline{A}$$

$$= (\overline{A}+\overline{B}) AB\overline{A}$$

$$= \overline{A}AB\overline{A} + \overline{B}AB\overline{A}$$

$$= \overline{A} \cdot AB\overline{A} + \overline{B}BA\overline{A}$$

$$= 0 + 0$$

$$= 0$$

$$= 0$$

$$= 0$$

$$= 0$$

$$= 0$$

$$= 0$$

$$= 0$$

$$= 0$$

$$\frac{j}{y} = \overline{(\overline{A} + c) (B + \overline{D})}$$

$$y = \overline{(\overline{A} + c)} + \overline{(B + \overline{D})}$$

$$= \overline{(\overline{A} \cdot \overline{c})} + \overline{(\overline{B} \cdot \overline{D})}$$

$$= A \cdot \overline{c} + \overline{B} \cdot \overline{D}$$

\* semplify the following boolean equation and realize are basic gate.

- 1. AB + A(B+c) + B(B+c)
- ii. [AB(C+BD)+AB]C
- III. ABC + ABC + ABC + ABC.

#### Realize all gates by wing NAND gate.

1) NOT gate wing NAND

2) AND gate wing NAND

3) OR gate wingNANID

$$A \circ \Box A = \overline{A} \overline{B} = A + B$$

1 NOR gate wing NAND

6 XOR gate Wing NAND

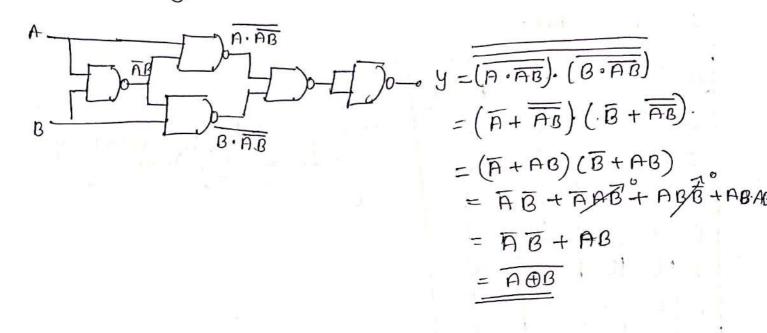
$$B = \overline{A \cdot \overline{AB}} \cdot \overline{(B \cdot \overline{AB})} \cdot \overline{(B \cdot \overline{AB})}$$

$$= \overline{A \cdot \overline{AB}} + \overline{B \cdot \overline{AB}}$$

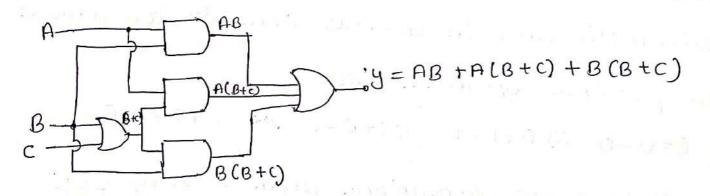
$$= A(\overline{A} + \overline{B}) + B(\overline{A} + \overline{B})$$

$$= A(\overline{A} + \overline{B}$$

X-NOR wing NAND gate.



Problem write boolean engression and touth table for following logical circuit.



the logical Boolean enpression for above logic -al circuit is.

$$y = AB + A(B+c) + B(B+c)$$

$$= AB + AB + AC + BB + BC$$

$$= AB + AC + BC + B$$

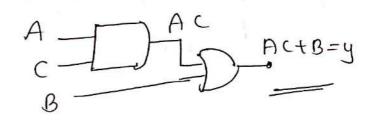
$$= (A + B + 1)B + AC$$

$$= B + AC$$

y= Ac+B

Truth table.

15						T
	А	B	C	A-C	AC+B	
	O	0	0	0	0	A - AC+B=4
	0	0		0	0	$C \longrightarrow C \longrightarrow$
	0	Ť.	0	0	· 1	B — =
	0	1	1	0	1 /	
	1 6	0	0	0	,0	
	1	0	1	1	1	
1	1	1	0	0	1	
	1	1.1	<u> </u>	11	111	
						H



Adders.

The basic building blocks of the assisterablic avoithmetic unit in dégital compater au adders. The possible operations are

$$0+0=0$$
  $0+1=1$   $0+1=1$   $0+1=1$   $0$ 

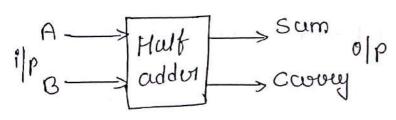
The figuret three operations produce only sum and last operation has two bits. The LSB Ps called as a sum bit & The MSB bit is called as a carry bit.

#### Half Adders. [HA]

A combinational circuit which perform the with - matic addition of two binary digits is called a half-adden.

\* It consists of two binary inputs and two outputs sum & cavoury.

Block diagram of Half adder.



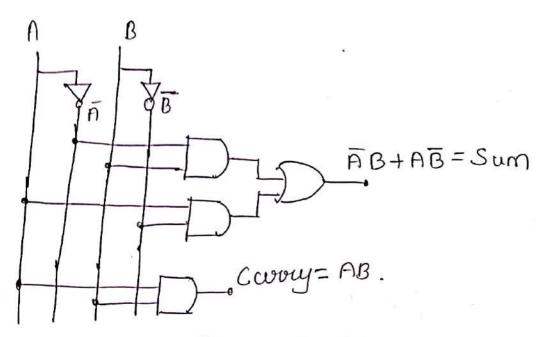
Truth table of Half adder

. 7	A	B	Sum	carry
	0	0	0	0
	0	1 ]	11.00	0
	1	0	1	0
L	1		0 1	

Boolean enpression.

implementation of Half adder wing X-OR gate.

Implementation of half adden wring busic gate. 42



Limitation of halfadder

In half adder we can't add the cavery of the previous digital data, there kind of addition requires 3 bit hence full adder i'n ruquired.

Fall adder.

A combinational circuit which performs the arithmatic addition of those binary input. [i.e. two lignificant bits & a previous carry]. -> it consists of three inputs and two output.

Block diagram of full adder.

A Fall Sam
B adden Sout

A and B! Bits to be add Gin: Cavry ofp from the previous stage.

Cout: carry out to ment

Truth tube of Full adder.

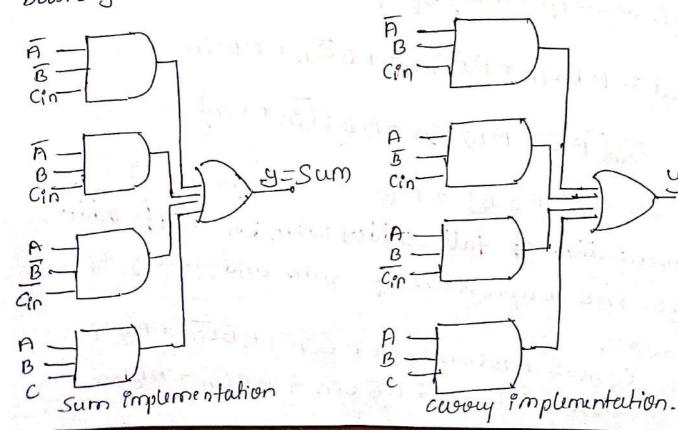
A	В	Cin	Sum	Cout
0 0 0 0 1 1 1	0000	0   0   0   0   0   0   0   0   0   0	0	0 0 0

Boolean expression of full adder.

S= AB Cin + AB Cin+ AB Cin+ ABC

Cout = ABCin + ABCin + ABCin + ABC

implementation of sum and covery of Full adden we'ng basic gate.



Eupression for Sum & caviny after semplification 44 semplification of sum of full adder Sum = ABCin + ABCin + ABCin + ABCin = Cin[AB+AB] + Cin[AB+AB] = Cin[AOB] + Cin[AOB] Est take N=ABB = Cin X + Cin K = Cin D K Substitute u value thungum = Cin & A & B Sum = A & B & Gin/ Simplification of carry of full adder. Cout = ABCin+ABCin+ABCin+ABCin =Gn(AB+AB) (in+AB(CPn+CPn) = Cin[ADB] + AB [: Cin + cin = 1] implementation of full -added with two half udder. consider the expression of sum and caviny of full adder Gum= ABCin + ABCin + ABCin

Cout = ABCin + ABCin + ABCin + ABCin

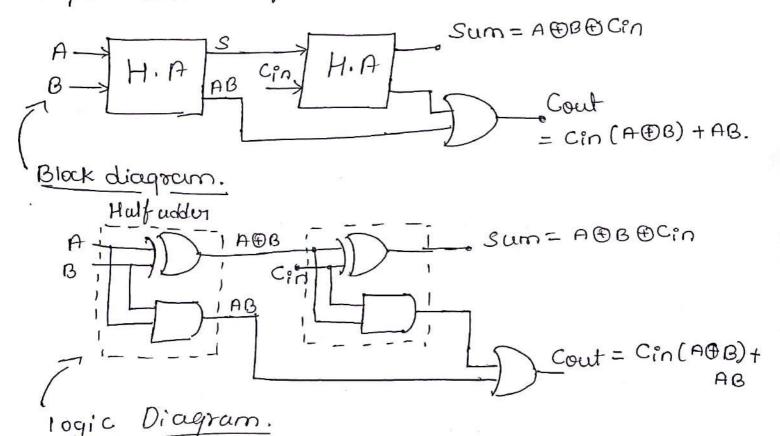
#### [do the simplification]

thun

Sum = ABBB cin

Cout - Cin[A +B] +AB

implementation of a full adder using two half adder.



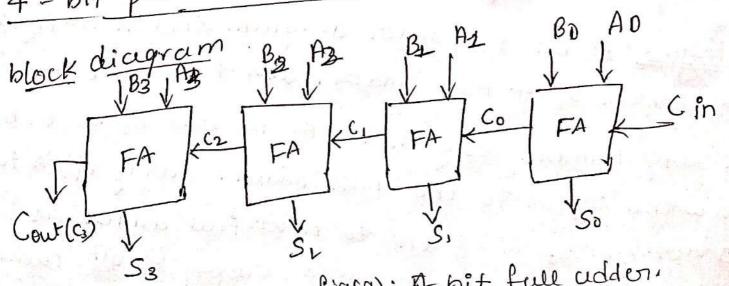
## Parallel adder.

A parallel adder es a digital circuit capa - ble of finding the courthmetic rum of two benavy numbers that is greater than one bet in length.

It consints of full adders connected in a chain where the output caviny from each full adder is connected to the carry input of the next full adder in the chain.

An bêt parallel adder requires n full adders to perform the operation.

## 4-bit purallel adder.



figca): A bit full adder.

 $A = 0 \quad A_3 \quad A_2 \quad A_1 \quad A_0 \quad Cin = 0$   $A = 0 \quad B_3 \quad B_2 \quad B_1 \quad B_0$   $Coul \quad S_1 \quad S_2 \quad S_1 \quad G_0$   $Coul \quad C_{coul}(c_3) \quad C_2 \quad C_1 \quad C_0$   $A = 0 \quad C_3 \quad O_1 \quad C_0 \quad C_1 \quad C_0$   $C_3 \quad O_2 \quad C_0 \quad C_1 \quad C_0 \quad C_1 \quad C_0$ 

Trulh -lable.

											n # 2 2		1
ì	1 Pig	n-	Ai	n,	Bs	B=	BI	Bo	Cour	Si	52	51	So
	1	0	0	!	Ι.	0	1	1	1	0.	1	0	0
4)	0		l	0		1	0	1	* 14.23	0	O	$\mathbf{t}^{\tilde{i}}$	1
		1 - 3 -	0	1	0	0	1 / 1 / 1	0	0	11-)	J	, \	.1
	١	1	11	0	0	0	13.3	d. 3	i i	O	O	0	1
1,000	1001 1001 1001												
C	0   wuy.	00	CU	100 svy	11		/- x) }	1 1	1 1 2 117. <sub>171.0</sub>	cas U	vy	0	
		1 C 10		747	and the state of		1 1		· ma Ch		. 0	1':01	0.1

Theory 4 bit four adder diagram shown in figla)
if consider of 4 Full adders, and two 4 bit
binary number say A3 A2 A, A0 and B3 B2 B, B0
binary number say A3 A2 A, A0 and B3 B2 B, B0
over the inputs to the 'Full adders. Cavery of 1's tour
adder say co is given to next full adders as
adder say co is given to next full adders as
adders say co is given to next full adders as
adders say co is given to next full adders as
adders say co is given to next full adders as
adders say co is given to next full adders as

re op-amp en also known as differential Amplifion.

operation

Ideal characteristics of openps.

- orawn any current from the voltage sources connected to its input terminals. Thus its input resistance is in infinite i.e Rin=00
- 2) Zero output impedance: The output voltage of an ideal op-amp in independent of the current drawn from it. Thus it has zero of quantance in e Ro=0
- an op-amp en infinity r. e AoL = 00
- Band width: The Bandwidth of an ideal op-amp in infinite that is an op-amp amplify both de a well as ac signals.
- 5) Intenète CMRR: The common mode rejection ration of an edeal op-amp is entenète CMRR=00
- 6) slew rate! In ideal op-amp has infinite slew rate SR = 00, this means that the output voltage changes simultaneously with the output voltage.

  7) Zeno PSRR: The power supply rejection ratio of an of infinite slew.

ideal op-amp in zero.

1	3
(	91
-	

3) Zero offut voltage: The presence of small output, voltage when v,= vz=0 in called an offset voltage. it is zoro for an ideal op-amp.

1	
21	Parameter symbol Ideal Practical opeamp opeamp opeamp [Ic +41]
0	and long gain AoL 0
	IMJL IMJL
	output impedance Zin Zout of On 1910
3	
	BOUNG 10
10/3	CMRRIUS de mension of mon fering od Dolog od Dol
	stew nate Stranger May Co 30 100 0.5 V/ use
0.00	PSRR DONAL PSRR O DONALISONALIVO
13	The de the object of the solution
	offut voltage Viosis Voos

## Common mode Rejection recito [cmrr]:

" It is defined as the ratio of the differential vot - age gain de Ad to common mode voltage gain Ac! i. e/cmrr = Ad Gain = Wo

It in the ability of the op-amp to reject a sort on mode rignal. i.e producer zero of p when it the ilps are same.

for an ideal op-amp Ac=0 i.e common mod Voltage gain is zero, hence ideal value of cMRR is Infinite.

CMRR is also expressed in dB, as

CMRR Pn dB = 20 10910 [Ad Ac]

The typical value of CMRR for MATHIIC is godB

#### Slew Rate (5R)

Slew rate is a measure of how fast the op-ar of p can change with respect to the change in the enput rignal.

"Slew rate of the op-amp is defined as the man -mum time rate of change of its output voltage

enpressed on volta per microsecond?

SR =  $\frac{dV_0}{dF}$  | mawmum for IC741, SR in Distipum Ideal value of SR in  $\infty$ 

The power supply sujection ratio Ph defined as the ratio of the change in input offset voltage due to the change on supply voltage.

PSRR = DVios

It is expressed in myly or myly. The ideal value of PSRR is zero, For MATHIIC IT PA 30MV/V.

offut voltage

=) Input offut voltage [Vios

when  $V_1 = V_2 = 0$ , then output must be 2000, But practi - cally ofp is not 2010. To make this output zero a small de voltage is applied to any one of them isp termenals. this small de vortage és called epoffut

= Vic Vo = Small => Vion I - VEE voltage.

Of offut voltage [Voos]; when offust not both P/ps are zoro i.e V,=Vz=0, the p/p mut be zoro but practically a small voltage is present at the Off. this voltage es called as of offset voltage.

slock diagram of op-amp: The block diagram of op-amps conserts of fown Stages shown in figure. output Sp Intermediate Buffer & level ip 10 - Input Shifting Steage its of ipstage are is input stage! The basic requirements -> It have high voltage garn -> two ilp terminals -> It has high i/p impedance > high CMRR The dual ip, balanced output differential amplifier sutisfice all there requirements. 2) Intermediate stage: The main function of intermediate

stage is to provide an additional voltage gain. This stage consists of carcalled amplifious called as multistage amplifiers.

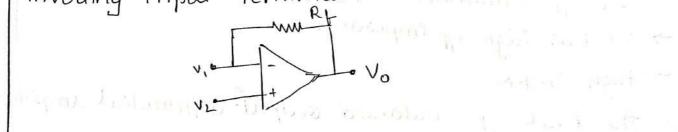
- 3 Level shifting stage: It brings the dc level down to ground potential when no signal is applied.
- 4) ofp Stage: the basic requirements of autput stage are
  - \* low ofp impedance
  - + Short ckt protection
  - \* low power divipation

A put-pull dan AB or class B amplifier satisfies all the requirements.

# Neccenity of -ve feedback in an op-amp.

-ve tedback increases the frequency bandwidth in which the gain couve sumains flat and decre in which the good output impedance.

The negative feedback in possible by adding a suiter to be negative called feedback suiston. The feedback is said to be negative cast feedback resister (Rf) connects the output to the investing input terminal.



Advantages of -ve feedback:

- -> Reducer the gain
- -> increases the B.W & frequency range.
- -> It increases the i/p resistance.
- of It de creaux the ofp revistance.

Due to Rf, overall gain reducer and et in called as closed loop gain or gain with feedback Af.

Concept of virtual ground.

18 to a go for the control of the control of the

consider a for-ye feedback from Ukt as shown The olp voltage in given by it is will mi Vo = AOL (V2 - V1) biblio ip biblio bellis V2-V1 = V0 And Voltage Vcc 4 AOL = 2/x1050 to 1 To 741  $V_2 - V_1 = \frac{109010}{9\times10^5}$  [5.4.01  $V_0 = 100$ ] voltage Vin of 18.  $\Rightarrow V_2 - V_1 = \frac{100}{2005} = 0.5 \text{ My mag most}$ value es vous small compared to the voltage (VPn=10).

 $or/V_2 = V_1$ 

The involving & non-involving if p terminals we at the same potential. Therefore no current flows through Rin. Thus  $V_2 = V_2 - V_1 = 0$  of across Rin & current through Rin box is zero. This concept of virtual short is called virtual ground.

op-amp Applications.

Dinear op-amp application: how of voltage Vg

Vavier linearly with the 1/p voltage. -ve feedback

(Rf) is eved.

Eg: Inverting, non invorting ampr, voltage follower, differentiator ampr etc.

I. Non-linear op-amp applications: - How the feedback is provided from ofp to the inventing is terminal using dioder, translators etc.

Eg: comparator, clampor, modern schmitt triggers, precision rectifions.

6	
Ideal Inverting Amplifier	
in a condied to the inverting input	1
through surestor RI & the non-involving term	enul
mough	
is grounded.	brank
the back from the oppin appared in appared	he
in a resistor RI to inventing terminal.	An In
feedback revistor Rt to inventing terminal.	
A It provides a phase whift of 180° b/w i/F	, 8
olp hence the name Provoching amplifion.	
of participants of participants RE	151
An node B in converted to might be will be wil	- 1
An node B in convicted to Ri	1.7
GIND. From the concept of	
An node B in converted to  GIND. From the concept of  Virtual GIND  Virtual GIND	The state of the s
Virtuel University amplific	Π.
	101
Apply KCL @ Neocle A. Vint	15-1
I = I T TO T	-> +
Mile a Ker (3) heele y	100
from the UCT.	_> +
Trom the contract of the Variation of th	20.33
120 ph	wiff
sub I, & If value to eqt (2)	in plan
mil of O har be	1 1
Vin-VA - VA-Vo	
RI RI	= 3
of Va = D. [ egt O]	

$$\frac{\frac{Ven}{R_1} = \frac{-Vo}{R_f}}{\frac{Vo}{R_1}} = \frac{-Vo}{R_f}$$

$$\frac{\int Vo = -\frac{Rf}{R_1} Ven}{or}$$

$$\frac{\int A_1 = \frac{Vo}{R_1} = -\frac{Rf}{R_1}$$

$$A_{i} = \frac{V_{0}}{V_{i} \cap i} = \frac{-R_{i}}{R_{i}}$$

gain depends only

ideal non-Enverting amplifier.

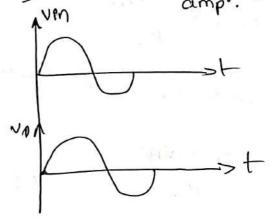
-> The ip in applied to the non-inverting terminal Pt amplifies the elp without any phase whift in the An node Ben applied with a input voltage Vin, hence output.

voltage at node A la also same.

from the Virtual GIND concept VA = VB = VOO -> 0 - WI Applying KCL @ node A.

$$\frac{0-V_A}{R_I} = \frac{V_A - V_O}{R_f}$$

But cept 1 Un = Vin sub VAIIn eg -Vin-Vo



$$\frac{v_0}{R_f} = \frac{v_{in}}{R_f} + \frac{v_{in}}{R_I}$$

$$\frac{v_0}{R_f} = v_{in} \left[ \frac{1}{R_f} + \frac{1}{R_I} \right]$$

$$V_0 = V_{in} \left[ 1 + \frac{R_I}{R_i} \right]$$

$$V_0 = \left(1 + \frac{R_f}{R_1}\right) V_{in}$$

At in always greater than I for non enverting amplifier.

Molochon (

Directions of

#### voitage follower

voltage tollower is a cut in which the ofp voltage tollows the Enput Vollage.

It in also called Source follower or unity gain amplifier, butter amplifier etc. The ckt for voltage follower is show in figca) 

At Node B, the input Vin is applied & hence VB = Vin & node A in connected to off.

VB VEE ON WOUND CK from the concept of Wirfual = Itigcas: voltage followerch.

GNO, Jos miss spoller is promove signing VB = VB = Vin Tuling mil mul

As vo es desectly connected vo

to node A,

alit hor

rainest or Addor Circuit: from eath Ownible and while duties the site figure in colled order or former of the

I No = N:0/011111 for legal out was want a reversing printer

VA Op-camp

The old voltage voin equal to Vin, if vin tes then vo ter & if Vin Ver then vo also Ver.

4) Input impedance in lutreme 1) Input impedance is high ty high

Summer or Adden circuit: The ckt which gives the addition of the applied i/p signals in called adder or summer Cht. There con two types of rummer ckt.

a) Inverting hummer b) Non-inverting rummer.

or equal to unity

### Involling Summer.

ext for involving summer is shown in fig (a). In this ext, all the "/p:s to be added are applied to the enverting enput termenal of an op-amp.

The 11p rignal Vi & V2 cou applied through R, & R2 as shown in fig (a).

Apply KCL @ node A.

From the ckt

$$\frac{V_1 - V_A}{R_1} + \frac{V_2 - V_A}{R_2} = \frac{V_A - V_O}{R_f}$$

from egt " O VA = 0 then egt (5) becomes

$$\frac{V_{1}-0}{R_{1}}+\frac{V_{2}-0}{R_{2}}=\frac{0-V_{0}}{R_{1}}$$

$$\frac{V_1}{R_1} + \frac{V_2}{R_2} = -\frac{V_0}{R_f}$$

$$V_0 = -R + \left[ \frac{v_1}{R_1} + \frac{v_L}{R_2} \right]$$

Note: when V1, V2, V3 & V4 are the elp's then,

Non invorting Lumming circuit.

In this cut, the Enputs to be added and applied

to the noninvolving terminal of an op-amp.

I = If >0 V2 RLIZ from Ukt,

tigen: Non-inverting summing (kt.

from egt n @ 4B = VA, then egt n & becomes

$$\frac{0 - V_B}{R} = \frac{V_B - V_O}{RF}$$

1 W V V V V

(61) 
$$\frac{Rt}{V_0} = \frac{Rt}{V_B} + \frac{V_B}{R}$$

$$\frac{V_0}{R_f} = V_B \left[ \frac{1}{R_f} + \frac{1}{R} \right]$$

$$\frac{V_1 - V_B}{R_1} + \frac{V_2 - V_B}{R_2} = 0$$

$$\frac{V_1}{R_1} + \frac{V_2}{R_2} = V_B \left[ \frac{1}{R_1} + \frac{1}{R_2} \right]$$

$$V_{B} = \frac{\frac{V_{1}}{R_{1}} + \frac{V_{2}}{R_{2}}}{\frac{1}{R_{1}} + \frac{1}{R_{2}}} \xrightarrow{5} \stackrel{6}{\cancel{5}}$$

$$V_0 = \left(\frac{\frac{V_1}{R_1} + \frac{V_2}{R_2}}{\frac{V_{R_1} + \frac{V_{R_2}}{R_2}}{V_{R_1} + \frac{V_{R_2}}{R_2}}}\right) \left(1 + \frac{RP}{R}\right)$$

## Integrator

In the integrator circuit, the output voltage is

VEE

the integration of the input voitage.

hence from the virtual vin I VA

Apply kcl @ node A

But from eyt O

$$\frac{\text{Vin}}{R} = -Cf \frac{dv_0}{dt}$$

integrate both the ride wir.t it

St dvo = - Transtring Vo = - Trap st vindt whom C = RCf is called time constant. \* 1800 - ve sign indicates 180° phase shift bluisps \* It Cf is large, then time constant is large hence the perfect ofp. Application: In analog computer, A to Diconverters, ramp wave generatoris, wave shaping ext etc. Differentiator. In the Diffountiator Ckt, the out output, voltage is the differentiation of its proper voltage. Tight From the concept of virtual ground concept, VB=08 Vining VA op-ame hence VB=VA=OV-70 tigica); cut of Differentiator Apply KCL @ node A I = If

sub value of VA=04

or 
$$v_0 = -R_f c \frac{d}{dt} (v_{in})$$

where  $C = R_f C$  is called time constant of different

-ve rign endicates 180° phane shift blu inputs output.

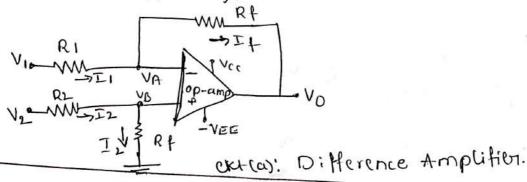
Application: + In wave shaping cht, ramp wave generator etc.

## Subtractor or Difference Amplifion:

The Ukt which gives the mub difference of the applied in put woltage is called rub tractor.

To obtain the ofp, vo superposition principle is used. that is considering one if p@ a time setting other to zero.

The ext diagram for subtractor amplifier. is shown in ext ca).



Vol be the output when only vi in applied & set V2=00.

To Find Voi, Uct acts an involting amps, then CKt becomes [shown in figure) VI RI

$$V_{01} = -\frac{Rf}{R}V_1$$

Hig(b): V1 = Vin & 1/2=0 let voz be the ofp when only vz in applied by retting

To find Voz [when V1=OV], the ckt becomes non involving amplifier. then cut is shown in fig(c).

For a non-involving amp, Ri Va spamp

The ofp is given by

$$V_{02} = \left(1 + \frac{Rf}{RI}\right) V_{B} \longrightarrow 0$$

where VB is the ilp voltage applied @ non-envoling terminal.

To find VB Apply vostage divider rule

.. 
$$VB = \frac{V_2 \times R_F}{R_2 + R_F} \rightarrow 5$$

then egt & becomes.

VO2 = 
$$\frac{V_2 R_f}{R_2 + R_f} \left(1 + \frac{R_f}{R_I}\right) - \frac{Q}{Q}$$

Opi

The total ofp voltage vo due to V, and V2 are

$$V_0 = \left(\frac{R_1 + R_1}{R_1}\right) \left(\frac{R_1 V_L}{R_2 + R_1}\right) - \frac{R_1}{R_1} V_1$$

No = V2-V1/ Hence the Subtractor.

### Oscillators.

"An oscellator is an amplifier which was poss

-tive feed back & without any enternal ilp rignal, genera

tes constant oscillationis of designed frequency.

Derined frequency is decided by its circuit components.

An osu'llutor en basecally a signal generator that produces a renusoidal or non renusoidal Al of some particular frequency.

Bankhausen's creteria ?! bauic invocting amp with open \* consider a

loop goin A. I wall \* The feed back network attenuation factor B in

less than unity (BKI)

ted back feed back acts as ilp. Ne n/w 180° phose snite. An baic complétion en inverting, et introduces a phase shife of 180° b/w i/p and o/p

For an oscillator, the feed back must be positive the feedback network must introduce a phase wift of 180°

$$A = \frac{V_0}{V_0}$$

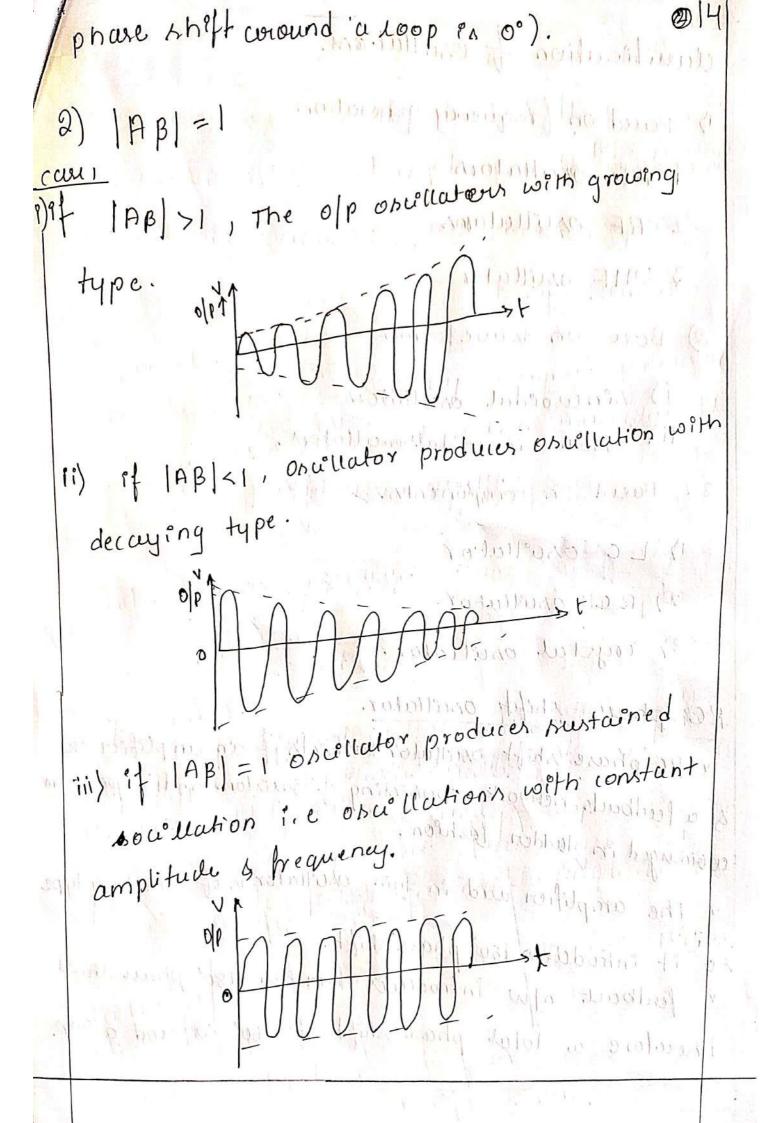
$$V_0 = A V_0^0$$

for an oscillator, the feedback n/w drives the amplifier. If act as Vi so that  $V_{+}^{2}=V_{1}^{\circ}$ 

The Bunkhausin's criteria states that.

1) Total phase shift around a loop is 0° or 360°.

(for inverting amp' that total phew shift around a loop is 360°, tornon-inverting amplifier, total aloop is 360°, tornon-inverting amplifier, total



danitication of oscillators.

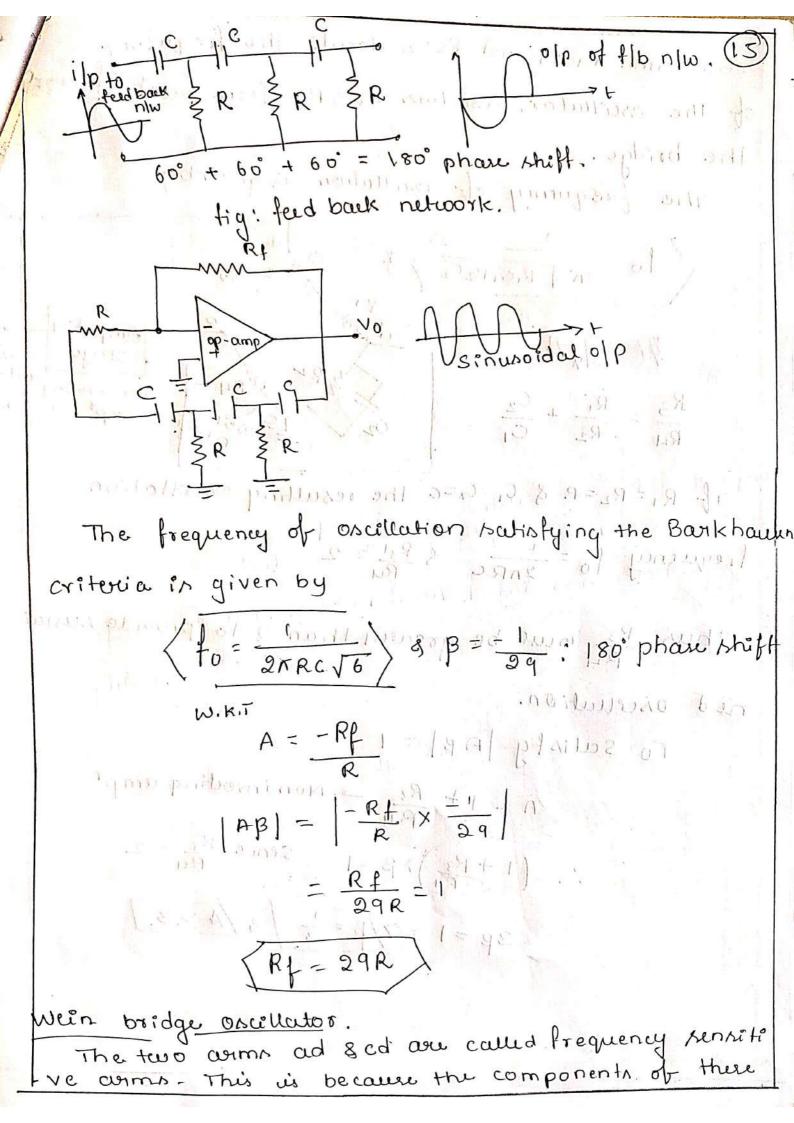
- i) Baud on frequency generation
  - I AF oscillators
  - 2 RF oscillato:
  - 3 UHF oscillator
- 2) Bau on waveforms
  - i) sin usoidal oscillators
  - ii) Non-sinusoidal oscillators.
- 3. Based on components.
  - 1) LC oscillator
  - 2) RC oncellutor
  - 3) cogetal oscillator.

## RC phase - shift oscillator.

- \* RC phase shift oscillator consists of an amplifier ckt g a feedback network consisting of secuntors and capacitors awanged in ladder fashion.
  - \* The amplifier weed in this oscillator is of inverting type

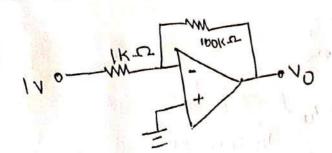
so it introduces 180° phase shift.

\* feedback n/w introducer further 180° phase shift therefore a total phase shift of 360° wound a loop.



two winn Rici and R2C2 decide the frequency of the oscillator, Resistors R3 & R4 form part of the bridge. The frequency of oscillation is given by  $\left\langle f_0 = \frac{1}{2\pi \sqrt{R_1 C_1 R_2 C_2}} \right\rangle$ Amplifier AF THAT!  $\frac{R_3}{R_2} = \frac{R_1}{R_2} + \frac{C_2}{C_1}$ If RI=Rz=R & CI=Cz=C the resulting oscillation frequency to = 1 2 Rg = 2 Thus R3 must be greater than 2 to provide sustain ned oscellation. To satisfy ABI = 1 A = 1+ R3 -> Non-involing ampr  $\therefore \left(1 + \frac{R_3}{R_H}\right) \times \beta = 1$  Sence  $\frac{R_3}{R_H} = 2$ 3B=1=7/B=1/3/8/AZ3:

Problem 1: Find the ofp voltage and Masad-Josep gain



3) Find the ofp voltage and gain.

W. W. T. Nath

$$= \left[1 + \frac{12 \times 10^{3}}{1.5 \times 10^{3}}\right] \times 1$$

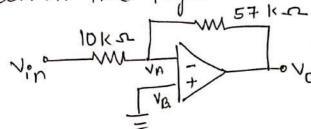
$$= \left( 1 + 8 \right) \times 1$$

$$A = \frac{V_0}{V_0} = \frac{9V}{IV} = 9$$



Determine the voltage gain of the op-amp ut

shown in the figure.



soluln

given

R,=10KA

Vin= 1

Vouch =?

A = 9

From the concept of virtual GIND

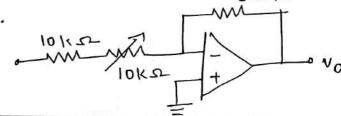
Rf=57ks Apply KCL @ node A

$$\frac{V_{i}^{\circ} n - V_{A}}{10 \, \text{k} \, \Omega} = \frac{V_{A} - V_{O}}{57 \, \text{k} \cdot \Omega}$$

$$\frac{\text{Vin}}{\text{IDX IO}^3} = -\frac{\text{Vo}}{57 \times 10^3}$$

$$A = \frac{V_0}{V_{in}} = \frac{57 \times 10^3}{10 \times 10^3}$$

1) what will be the voltage gain range for the circuit shown en tique.



solut

givendata.

$$V_0 = \frac{-R_f}{(R_1 + R_L)} V_{in}$$

15

$$A = \frac{V_0}{V_{00}} = \frac{-R_1}{R_1 + R_2}$$

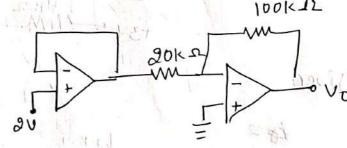
$$A_1 = -\frac{500 \times 10^{+3}}{10 \times 10^3 + 10} = -50$$

$$A_1 = -\frac{500 \times 10^3}{10 \times 10^3} = -25$$

111 intho 11 10 x 10 1 10 x 10 3 1+ 10 x 10 3 on boil The voltage gain is - 25 to - 5 0 1 - ve kign

endicates phase shift blu i/p solp.

calculate the output voltage vo for the circuit 100KS shown in figure.



solut

refollowed 100km como inverting 个了 amplition. 20 R. T. IV.

From the concept of virtual GIND VB= VA = 00.

$$\frac{20 - V_A}{20 \times 10^3} = \frac{V_A - V_O}{100 \times 10^3}$$

$$\frac{20}{20\times10^{3}} = \frac{-V_{0}}{100\times10^{3}}$$

$$V_{0} = -\frac{2\times150\times10^{3}}{20\times10^{3}}$$

$$V_0 = \frac{-R_f}{R_1} \times V_{in}^{\circ}$$

$$= \frac{-100 \times 10^{3}}{20 \times 10^{3}} \times 2$$

given

$$\frac{1}{\sqrt{1}} = -40$$
 $\frac{1}{\sqrt{2}} = -20$ 

$$V_0 = -\left(\frac{Rf}{R_1}V_1 + \frac{Rf}{R_2}V_2 + \frac{Rf}{R_3}V_3\right)$$

F) calculate the output voltage of the circuit shown in figure.

$$\frac{V_{1}-V_{B}}{1|a|}+\frac{V_{2}-V_{B}}{2|a|}+\frac{V_{3}-V_{B}}{|a|_{3|a|}}=0 \quad V_{1}=|V|_{2a}=0$$

$$V_{2}-9V$$

$$\frac{1 - V_{B}}{1 \, b} + \frac{2 - V_{B}}{2 \, b} + \frac{3 - V_{B}}{3 \, b} = 0$$

$$V_b = \frac{18}{11}$$

App

$$V_0 = \left(1 + \frac{Rt}{R}\right) \times V_{00}^{*}$$

$$= \left(1 + \frac{1k}{1k-\Omega}\right) \times \frac{18}{11}$$

Module -5 Communication System

Block diagram of communication system.

Any electronic communication system can be represented in its basic form, as shown in figure

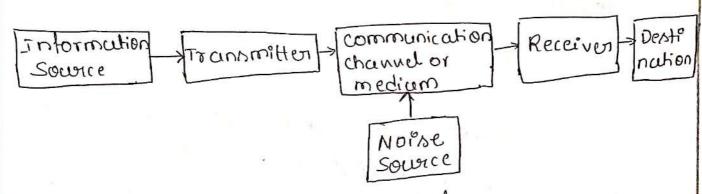


fig: Block diagram of communication system.

The busic components of communication systems com transmitten, a communication channel, some and a necesser. Noise is present in the channel and gets added to the Information.

- \*) The Elements of communication system were as follows.
  - > Information
    - Transmetter
    - -> communication channel or medium
    - -> Noise

#### -> Receivo.

### Information.

- \* The communication Systems communicate menages comes from Enformation source.
  - \* The two main sources
    - -> ideas from human
    - -> changes in the physical environment.
  - \* messeges au like voice, picture, wde, data muic and their combination.
- \* The transmitter is a collection of electronic cht Transmitter designed to convert the information into a signal suitable for transmission over a given communicati
- -on medeum. \* most of the information in non-electrical and it is not suitable for immediate transmission.
- \* The bransducers, decoders, encoders chi au und to brans convert information into electrical rignal.
- \* Transmitter also has a built in amplifier Ukt to amplify the information which help the proper quereixen to mansmillion of information.

# Communication channel.

\* The communication channel is the medium by which the electronic signal is transmitted from one place to another.

\* It can be pair of conducting wine, coaxial cable optical fibre cable or free space.

Moise: Noise is grandom, underigrable or unwanted electric energy that enters the communication rystem via medium and interferer with the transmitted messages.

Recever: A neceiver is a collection of electronic ckts designed to convert the signal back to the original information.

x It consists of amplifier filters, detector, etc.

Modulation. Bare band communication. \* Anwlog signals can be convoited into digital

\* The original information rignals are analog or

d'égétal are néfleverd as baseband règnals.

\* The original Lignal distelly transmitted over medium is called bareband transmission.

Ex: Teliphony.

\* baseband signals we erro cannot travel longer distances in air, the Signal gets attenuated rapidly Hence for transmission of buseband Lignals by radio, modulation technique has to be used)

what is modulation? what is demodulation?

+ The process by which the bareband signal modifies the cavorier signal is called moderation and the nesultant rignal es called modulated rignal.

The process of seperating base band signal and coverier signal at the neceiving end is called demode

Note: In Electronic communication rystem, a high frequency signal called the carrier signal is and to transmit baseband signal to the destination.

# Need for modulation.

\* The base band rignal use incompatible for direct mannmission over the medium and therefore modulation technique for the communication of buseband rignal. \*The advantages of using modulation technique are given below.

- -> Reduces the height of antenna
- -> Avoids mixing of rignals
- -> Increases the range of communication
- -> Allows multiplexing of rignals
- -> Allows adjustments in the bound width
- -> Improves quality of neception.

Reduces the height of antenna.

\* The height of the centenna grequired for transmi -Mion and greception of gradio waves in radio

transmission es a function of wavelength of the

minimum height of the antenna in given as 2/4 frequency und. where was in given as

where -c is the velocity of light f frequency.

For example,

consider bare band signal with f=15KHz, Then

Height of antenna = 1/4 = FX4

= 3 x108 15 x103 x4

= 5000 meters.

5000 meters higher of allerva is unthinkable and unpractical.

so if we consider a modulated signal with IMH3 frague -ney in the broadcast band,

The heights of atenna = 
$$\frac{\lambda}{H} = \frac{c}{f_{XY}}$$

$$= \frac{3 \times 10^8}{1 \times 10^6 \times H}$$

$$= 75 \text{ melows.}$$

the height of auteura is practical and ruch atenna can be installed.

- 2) void mining of rignals.
- 4) All sound signals concentrated within the range 20 Hz to 20 KHz.
- \*) The transmission of bour band signals from voucous sources causes the mining of signal and it is very difficult to reparated at the neceiver end.
- \* To avoid this it is necessary to translate at different channel of electro magnetic apectrum shown in fig (a) + reach agreed channel given its own bandwith called

channel bandwidth. signall modulated, with governor frequency 80KH3, 120KH3 180KH3 220KH3 180KH3 320KH3 Signal Frequency Channel 1 Signal prequency bandwidth. Bandwidth bandwidth

Signals frequency tiqua): modulation avoid mixing of signal.

3. Increase therange of communication.

· Baseband signal ever in capable to transmit over dong distance. Modulation effectively increases the frequency of the backband rignal so that It can be bansmitted over long distance.

4. Allows multiplexing of signals.

Transa Modulation permits transmission of two or more signals simultaneously over the same channel. with the hulp of different convier signal it can be reperated at the queelver.

5. Allows adjustments in the bandwidth. Noise is the function of bandwidth, so modulation allows to change the bandwidth of moderaled ing nul to protect from noise.

6. Improves quality of reception.

The communication sydem using modulation. method reduce the effect of noise at neceiver.

Modulation Technique. Type of modulation. pulse modulation. Andread Continuous wiewe modulation) digital Analog modulation Amplitude Angle modulation modulation modulation pulse code made trequency phanimodu -falion modulation. PAM PPM

# Amplitude Modulation

In Amplitude modulation, Amplitude of carrier Signal changer of in accordance with the amplitude of modulating (bauband) rignal by keeping frequency and phase of the cavoier rignal as constant.

tiga shows the band signal, high frequency cavorier rignal and modulated rignal. \* In modulation ugual process the frequency of eavoir rignal gumains constants only amplitude vavues en accordance with the mode bauband rignal.

Base band signal 1ml VC. amplitude modula - ted Lignal. Var 30

#### Expremion for AM.

Douve the enpression for AM wave

The Instantaneous values of modulating (box band) rignal and carrier rignal is given by

Vm = Vm sin wmt ->0 for modulating SIL

Vm - instantaneous amplitude

Vm = Maximum amplitude

wm = 2 nfm = Angular frequency &

fm = frequency of baceband rignal.

Vc = Vc Sin wat -> & for carrier SII.

Vc = instantaneous amplitude

Vc = maximum amplitude

wc = 2rtc = Angular frequency 6

tre = trequency of bo cavoier rignal.

instantaneous value of amplitude moderlated signal

is given by

VAM = Vc + Vm

= Vc + Vm Sinwmt : vm=Vmsinwmt

:. VAM = VAM Sinwet

# VAM= (Vc + Vm Sinwmt) Sinwct/->(3)

modulation index.

It es the section of amplitude of modulating rignal to amplitude of carrier rignal. It is deno

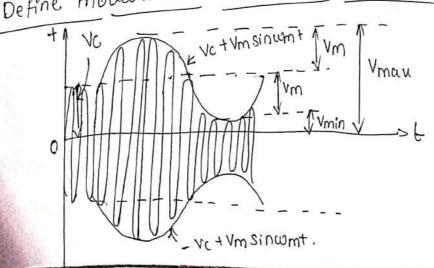
Problem 1: calculate the modulation index and percentage of modulation if instantaneous voltage of modulating rignal and cassier are 40 rin wont & 50 Sinuct, Hespectively.

Vm = 40sin Wmt

$$V_{c} = 40 \sin \omega ct$$
  $m = \frac{V_{m}}{V_{c}} = \frac{40}{50} = 0.8 \Rightarrow 80\%,$ 

Vm = 40

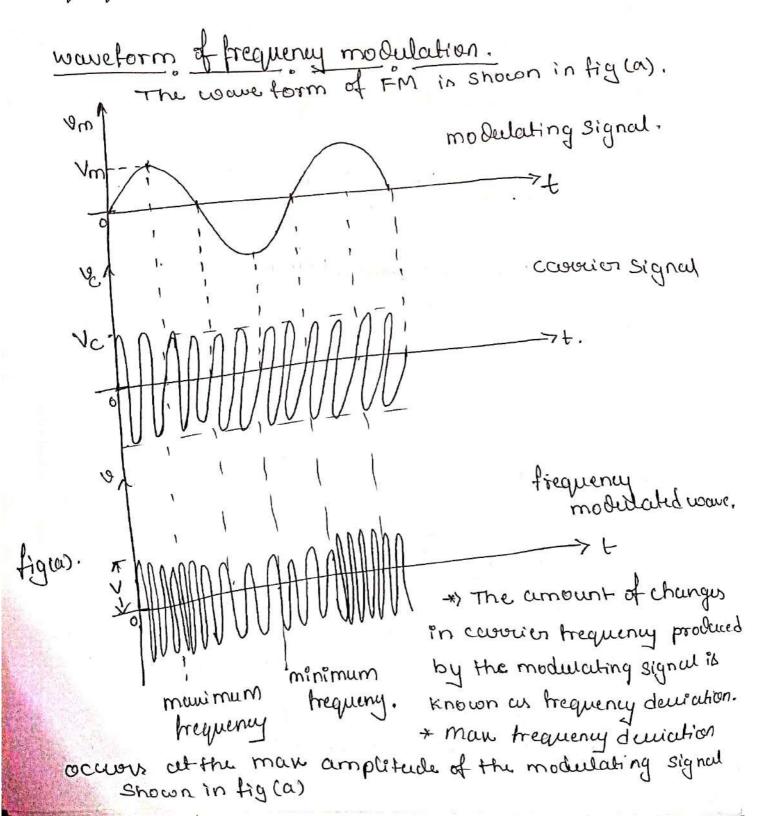
Define modulation index interms of Vman & Vmin.



Looking at fig we can write. 2 Vm = Vman - Vmin and Vc = Vmax - Vm -->0 Substitute egt 10 in egt 10 Vc = Vmax - Vmax - Vmin = 2Vmax - Vmax+Vmin  $V_c = \frac{V_{\text{max}} - V_{\text{min}}}{2}$ WIKIT  $m = \frac{\sqrt{m}}{\sqrt{c}} - \sqrt{m}$ Sub Wat egt O & 3 in @ m = Vman-Vmin x 1/2 Vman+Kin m= Vman-Vmin Vman + Vmin

# Frequency Modulation.

In frequency modulation, the frequency of coolior wave signal varies in accordance with the mobulating signal, by keeping amplitude and phase of carrier we signal pumains constant.



The empression for FM wave is given by

= A Sin [wet + mf sincomt]

whou

wc=2ntc, wm=2ntm

At = frequency deviation

A = Amplitude of FM highal

my = modulating index of FM.

modulation Index. of FM

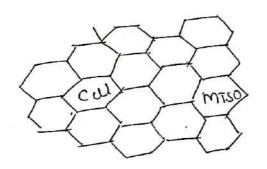
Modulation index of FM Bignal is the ratio of the frequency deviation to the modulating frequency.

mt = modulation index = frequency deviation
modulating brequency

$$\int mf = \frac{\Delta f}{fm} = \frac{s}{fm}$$

# principle of operations of Mobile Phone.

- \*A cellular mobile system provider standard
  Tuphone Operation by full duplex, two way readio
  at remote locations. I
- It provides a wireless connection to the public Switched Telephone network (PSTN) from any wer lowlion within the gadio range of the system.
- #) The basic concept of cellular radio SIm is, the System divides the service area into many Small area known as cells. Shown in fights.
- \*) euch cell have the own queciver and low-power Transmitter.

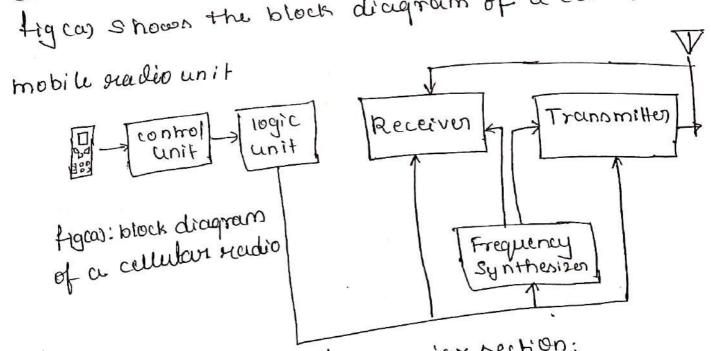


- +) Bouic cellular sim consists of mobile stations, bour stations and a mobile Switching center (msc).
- \*) MSC TA also known as Mobile Telephone Switching office (MTSO).

- + The MTSO controls all the cells and provides the interface between each cell and the main telephone office.
  - \* each mobile communicates with one of the base Stations
  - \* mobile statation her meny transscriver, authora and control unit circuitry.
- \* Ban station aut as bridge blue all mobile werg MSC.
- & MSC co-ordinates all autivities of bour station.
- \* celluleur sim also provider service known at rouming.

mobile communication system.

tig cas shows the block diagram of a cellus



The Unit consists of 5 major section:

> transmitted

-> RECEIVED

-> logicunit &

-> control unit.

tommen antenner.

## Transmitter.

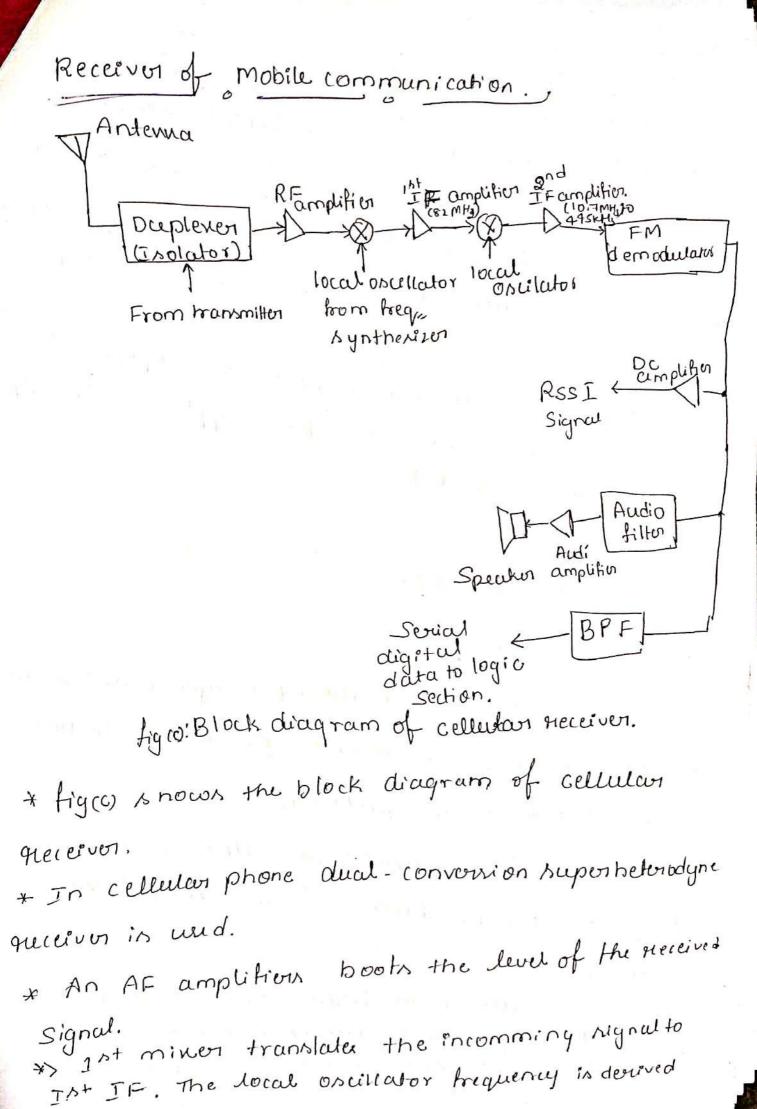
+ tigco Shows the block diagram of cellular brunsmetter.

\*) It is low power FM transmitter operating in the antenna

brequery range of 825 to 845 MHz. Hundung Han. \* puplexus Joinectional phau couples modulator Channel select freq from To receiverip freq synthesizer Microphen Audio Power of P Automotic complifien. detector bomes control unit To logic < Power Sense signal amplifier CKT

> tig (b): Block diagram of celletour Transmitter.

- signal and the coverien ilp from the frequency synthesizer.
- The modulated ofp in translated up to final transmitter bequency with the help of mixer whose second is also comes from the frequency synthesizer.
- + The miner of p is fed to clan c power amplifiers of final amplifier, which amplifies the signal to quequire -d level for transmission.
- + An automatic Power Control (APC) Ukt the transmi - Her to one of 8 power Dutput levels.
  - \* The directional coupler samples the transmitter of p power and rectifies it into a proportional dc. signal
  - + This signal is used on the APC UKL and in transmitted back to the cell site permitting the MTSO to know the present power level.
- \* The transmitter ofp is then ted to a duplexer or Isolator.
  - \* isolator helps allows the hansmitter and drecer ver to show the same auteura.



from the frequency synthesizes. The local escillator frequency run the necessor channel.

who signal from ofp of miner is amplified by an IF amplifier and then passed to the second IF

\* and IF is controlled by crystal controlled local

. oscillator.

\* The signal is then demodulated, de-emphasized\_ tiltered and amplified before being applied to the ofp specikin in the handret.

## Microwave communication.

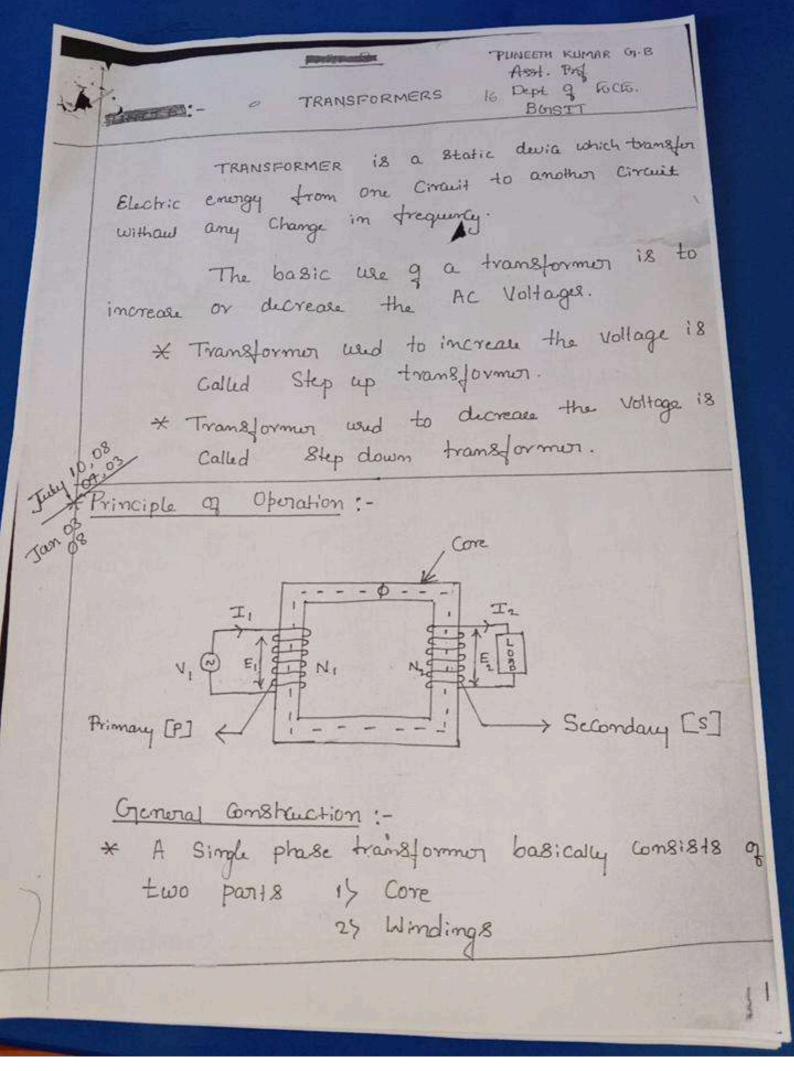
## what is microwave.

Is a signal having frequency range from 300 MH, to 300 G1Hz or wavelength ranges from I'm to Imm in the electromagnetic spectrum.

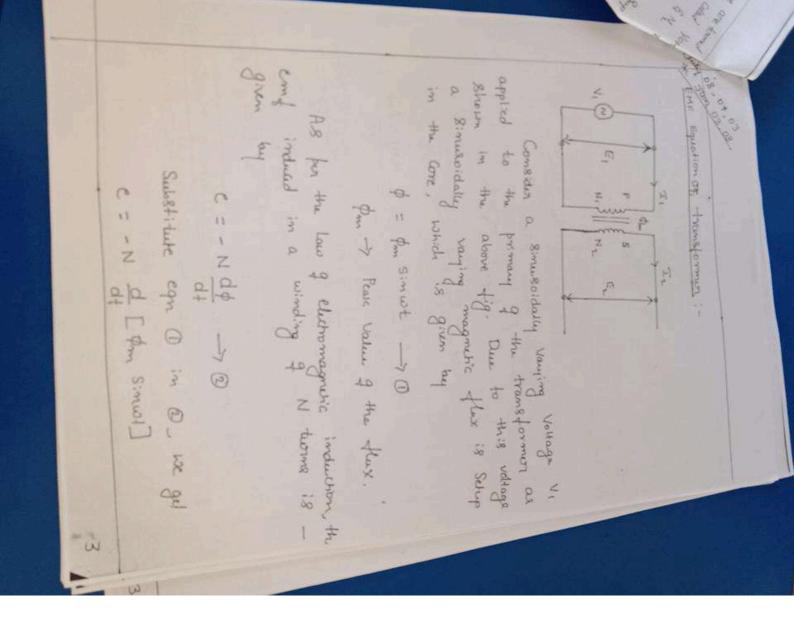
This band of trequencies is called as Microwave frequency band, which is further divided into

three bunds-

UHF (ultra high frequency) bound 300 mH3 to 361/3 SHF (super trigh frequency) band 36145 to 30614 EHF (entra high frequency) band 3061H3 to 300th



\* The Vertical portions 9 the Come are tormed (\*\*) \* The top & bottom portions are called you \* The two Coils P & S howing N, & Nr. \* The latingting which is connected to the sup is called primary winding [P] & the wind is called See which is connected to the Lead is called See - ary winding [S]. Working Principle !-A transformer operates on the principle ( Mutual induction When the Primary winding is Connected to an alternating Voltage of VI Volts, an alternatine Current flows through the primary winding & it Produce alternating flux in the core. When H flux links both primary & secondary winding an Emf E, induced in the Primary Winding an Emf Ez induced in the Secondary Winding. EI NAME NA EA Circuit symbol of a transformen

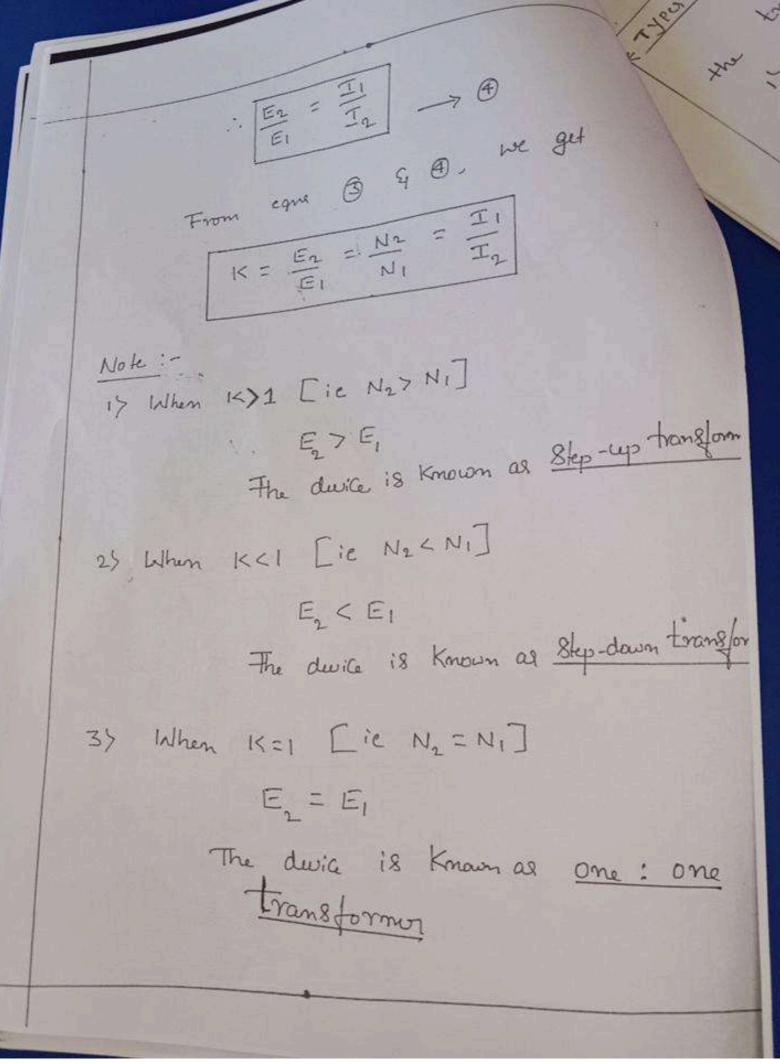


e = - NPm dI [Simust] = - NW /m = NW9m X[- 68W] = WN Pm X [ Sim (w+ -17/2)] c = 211/ N 9m Sim (w+ - 11/2) e 18 Max: mem lathern Sin (w+-17/2) = 1 : Em = 217 N pm But Exms = E = Em E = 277 N pm = UT VITT NAM = VITT + N pm E = 4.44 + N pm This egn is known as emf egn g transformor. # The emf induced in the primary winding is E1 = 444 | N1 0m

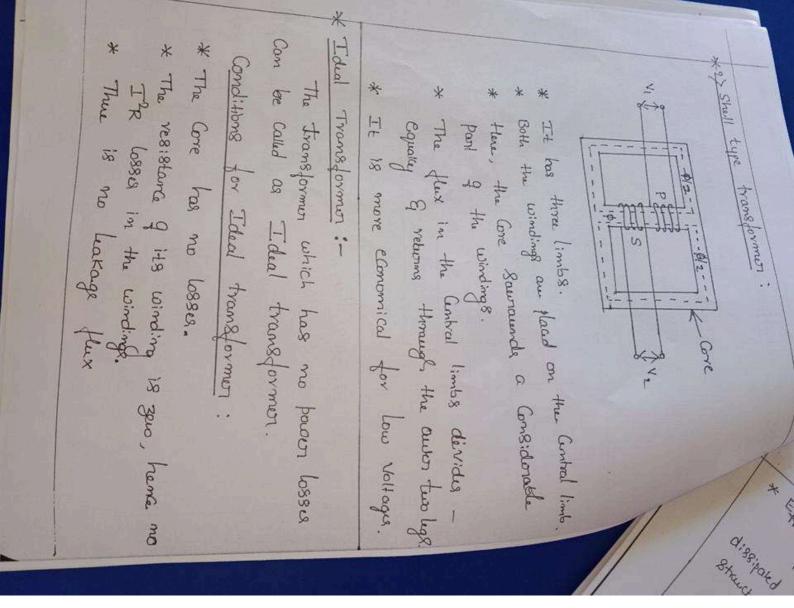
\* The end induced in the Secondary windry 18 Ez = 4.44 f N/2 pm Transformation vatio or turns valio: The valio 9 Secondary Voltage to Primary is known as transformation ratio. Voltage It is dended by K. .. K = Secondary Voltage Primary Voltage K = Ee -> 0 = 4.99 | N2 pm 4-44 N. Am  $K = \frac{N_2}{N_1} \Rightarrow \frac{1}{2}$  twoms ratio From egne 0 & 0  $K = \frac{E_2}{E_1} = \frac{N_2}{N_1} \longrightarrow 3$ For ideal transformer, Ilp power = O/p power EITI = ELTL

5

10



9 Transformers: - [ July 08. Inty 07, Duy 03] Depending upon the Construction of the Core transformers are classified into a types. Core type transformer Shell type bransformer \* 12 Core type transformers: \* In this type, the windings Sumound a Cons: -durable part of the core. Both the windings are divided into two parts E hay 9 Each winning is placed on each limb side by side. This is done to reduce the Leakage 9 flux. In this type, the flux has single foth. It is prefund for high Voltages.



\* Efficiency 9 an ideal transformer 18 100%. But in practical transformers, power is dissipated in the windings, core & Suonaumding 8tructure 8.

: Efficiency 9 the tractical transformer 18 Less than 100%.

Thine are two types of Power Losses occur in a transformor.

17 Coppor LOSS / IR LOSS. 9- P. R.C.

2) Iron 688 / Core 688.

1> Copper 688 / I2R 688 [Pc] :-

\* This is the power loss that occurs in the Primary & Scandary Winding.

\* Windings are made 9 Copper wire. Each winding has some resistance.

\* Power is wasted in the form of heat due to the vesistance of the windings. This loss is called Copper loss.

I, R, -> I'R 688 in the primary Winding. IZR -> IR Loss in the Secondary Winding.

200 The Since arrival Unimit egg and eddy IN HODDY.

Pc = T, R1 + T, R2 Pc : I' Rol Pc = The Rez

Where I, -> Current in the primary. In the Secondary.

Ro, -> Total resistance as refleved to primary. Roz -> Total resistance as reffered to Secondary.

Coppor Loss is proportional to the load & hange

it is called Variable 688.

2> Core 688 / Iron 688 [Pi]:-

Since the Core losses occasi in the iron Core, there are also Called iron Losses.

Iron 688 is further classified into two other 6880.

A. Eddy Current Loss

B. Hystorisis Loss

A. Eddy Covent 688 [Pe]:-

Time Varying Corrent flowing through the Primary winding produces time Varying flux in the Core This induces the Governt in the core, which flows in a circular path in the Core. This circular