

CBCS SCHEME

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15CS664

Sixth Semester B.E. Degree Examination, Dec.2018/Jan.2019
Python Application Programming

Time: 3 hrs.

Max. Marks: 80

Note: Answer any FIVE full questions, choosing one full question from each module.

Module-1

- 1 a. Explain the following :
- Skills necessary for a programmer
 - Interactive mode
 - Short circuit evaluation of expression
 - Modulus operator
- (04 Marks)
- b. Mention three types of errors encountered in python programs. Explain the basic building block of python with an example python program to display format number ($F_n = 2^{2^n} + 1$) for a 'n' value promoted by the users. (08 Marks)
- c. Describe python language support for arithmetic operators. Write a python programs to calculate student result based on 2 exam, 1 sport event and 3 activities conducted in a college with weightage of the activity = 20% and sports = 20% for 50 marks. (04 Marks)

OR

- 2 a. List and give syntax of all python supported conditional statements along with its usage with an example program to check whether given number is positive or negative or zero. (08 Marks)
- b. Differentiate between argument and parameter. Illustrate the flow of execution of a python function with an example program to convert given Celsius to Fahrenheit temperature. (08 Marks)

Module-2

- 3 a. Explain while and for loop write a program to generate Fibonacci series up to the given limit by defining FIBONACCI (n) function. (08 Marks)
- b. Mention the advantages of continue statement. Write a program to compute only even numbers sum within the given natural number using continue statement. (08 Marks)

OR

- 4 a. Define a string. How it can be traversed though using looping statement? Write a python program to display presence of given substring in main string. (08 Marks)
- b. How computational fault or computational errors are handled in python? Show it with an example python program to copy all lines beginning with vowels from FROM.text file to VOWELTEXT.text file retaining other lines. (08 Marks)

Module-3

- 5 a. Describe any two list operations and list methods. Write a python program to accept 'n' numbers from user, find sum all even numbers and product of all odd numbers in entered list. (08 Marks)
- b. List merits of dictionary over list. Write a python program to accept USN and marks obtained, find maximum, minimum and students USN who have scored in the range 100-85, 85-75, 75-60 and below 60 marks separately. (08 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
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OR

- 6 a. Compare and contrast tuples with lists. Explain the following operations in tuples
- i) Sum of two tuples
 - ii) Slicing operators
 - iii) Compression of two tuples
 - iv) Assignments to variables. (08 Marks)
- b. Explain extracting data using regular expressions. Implement a python program to find for lines having '@' sign between characters in a read text file. (08 Marks)

Module-4

- 7 a. How class can be instantiated in python? Write a python program to express instances as return values to define a class RECTANGLE with members width, height, corner_x, corner_y and member function : to find centre, area and perimeter of a rectangle. (08 Marks)
- b. Explain init and str method with an example python program. (08 Marks)

OR

- 8 a. Define polymorphism. Demonstrate polymorphism with function to find histogram to count the numbers of times each letters appears in a word and in sentence. (08 Marks)
- b. What is a pure function? Write a python program to find duration of event if start and end time is given by defining class TIME. (08 Marks)

Module-5

- 9 a. Explain any 2 socket functions. Explain support for parsing HTML, using regular expression with an example program. (08 Marks)
- b. Describe a support of security mechanism employed in Internet application with support of API usage with an example program to get four strings and put them in "hidden.PY". (08 Marks)

OR

- 10 a. Write a note on XML. Design python program to retrieve a node present in XML tree. (08 Marks)
- b. Brief on structured Query language, with suitable python program explain functions involved in creation of database table in python. (08 Marks)

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Module-4

- 7 a. Define class and object? What are programmer defined types? Explain with example. (05 Marks)
b. Illustrate the concept of pure function with python code. (05 Marks)
c. What is the difference between method and function? Explain the working of init method with suitable code. (06 Marks)

OR

- 8 a. Define attribute? With the help of python code, explain how functions return instance values. (06 Marks)
b. Explain the concept of modifier with python code. (05 Marks)
c. What is type based dispatch? Illustrate with python example. (05 Marks)

Module-5

- 9 a. Define socket? Writ a python program that makes a connection to a webserver and follows the rules of HTTP protocol to request a plain test document and display what server sends back. (06 Marks)
b. What is XML? How is it used is python? Explain parsing of XML with example. (05 Marks)
c. Define cursor? Explain connect, exccute and close command of databases with suitable example. (05 Marks)

OR

- 10 a. Write a python code to read the file from web using urelib and retrieve the data of the file. Also compute the frequency of each word in the file. (06 Marks)
b. What is JSON? Illustrate the concept of parsing JSON python code. (05 Marks)
c. Explain the concept of using JOIN to retrieve data in python. (05 Marks)

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Sixth Semester B.E. Degree Examination, June/July 2019

Python Application Programming

Time: 3 hrs.

Max. Marks: 80

Note: Answer any FIVE full questions, choosing ONE full question from each module.**Module-1**

- 1 a. List the features of Python Programming Language (at least FIVE). (05 Marks)
 b. What is the role of a programmer? List two skills required to be a programmer. (05 Marks)
 c. Explain the chained and nested conditional execution statements along with syntax and flow chart. (06 Marks)

OR

- 2 a. What are Python words and sentences? Explain with an example for each. (04 Marks)
 b. Differentiate compiler and interpreter. (04 Marks)
 c. Write python programs to i) Find largest of three numbers
 ii) Check whether the given year is leap year or not with functions. (08 Marks)

Module-2

- 3 a. With syntax, explain the finite and infinite looping constructs in python. What is the need for break and continue statements. (08 Marks)
 b. Write a Python program to generate and print prime numbers between 2 to 50. (04 Marks)
 c. What are String slices? Explain the slicing operator in Python with examples. (04 Marks)

OR

- 4 a. Write a Python program to count the number of occurrences of a given word in a file. (06 Marks)
 b. Write a Python function that takes decimal number as input and convert that to binary equivalent and return the same. (04 Marks)
 c. List any six methods associated with strings and explain each of them with an example. (06 Marks)

Module-3

- 5 a. What are the ways of traversing a list? Explain with an example for each. (04 Marks)
 b. Differentiate Pop and Remove methods on lists. How to delete more than one element from a list. (06 Marks)
 c. Write a Python program that accepts a sentences and build dictionary with LETTERS, DIGITS, UPPER CASE, LOWER CASE as key values and their count in the sentences as values. Ex : Sentence = "VTU@123.e-Learning"
 d = {"LETTERS": 12, "DIGITS": 3, "UPPER CASE": 4, "LOWER CASE": 8}. (06 Marks)

OR

- 6 a. Compare and contrast lists and tuples. (04 Marks)
 b. Write a program to check the validity of a password read by users. The following criteria should be used to check the validity. Password should have atleast
 i) One lower case letter ii) One digit iii) One upper case letter
 iv) One special character from [\$#@!] v) Six character.
 Your program should accept a Password and check the validity using above criteria and print "valid" or "invalid" as the case may be. (08 Marks)

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- c. Demonstrate i) how a dictionary items can be represented as a list of tuples.
ii) How tuples can be used as keys in dictionaries?

(04 Marks)

Module-4

- 7 a. What is a Class? How to define a class in Python? How to instantiate a class and how the class members are accessed? (04 Marks)
b. Differentiate class variables and instance variables. (02 Marks)
c. Write a Python program that uses datetime module within a class, takes a birthday as input and prints the age and the number of days , hours, minutes and seconds until the next birthday. (10 Marks)

OR

- 8 a. Write a program that has a class Point with attributes as X and Y co-ordinates. Create two objects of this class and find the midpoint of both the points. Add a method reflex_x to class point, which returns a new point. Which is the reflection of the point about the x – axis.
Ex : point (5, 10) ⇒ reflex_x returns point (5, -10). (06 Marks)
b. Differentiate between simple, multiple and multi – level inheritance. (06 Marks)
c. Write a program that has a class Person , Inherit a class Student from Person which also has a class MarksAttendance. Assume the attributes for Person class as : USN, Name, dob, gender. Attributes for Student class as : Class , branch , year , MA.
Attributes for MarksAttendance : Marks, Attendance.
Create a student S = Student ("1AB16CS005" , "XYZ" , "18-1-90" , "M" , 85 , 98) and display the details of the student. (04 Marks)

Module-5

- 9 a. Demonstrate with the help of Python construct i) how to retrieve an image over HTTP.
ii) how to retrieve web pages with urllib. (08 Marks)
b. Compare and contrast the JavaScript object Notation (JSON) and XML. (04 Marks)
c. What is Service – Oriented Architecture? List the advantages of the same. (04 Marks)

OR

- 10 a. Write a Python program that retrieve an user's Twitter friends , Parse the returned JSON and extract some of the information about the friends. (08 Marks)
b. Create a simple spidering program that will go through Twitter accounts and build a database of them. (08 Marks)

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Sixth Semester B.E. Degree Examination, Aug./Sept. 2020

Python Application Programming

Time: 3 hrs.

Max. Marks: 80

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. Explain types of error with examples. (04 Marks)
 b. Explain various Names, Keywords and expressions with examples. (06 Marks)
 c. Write a python program using try and except, so that your program handles non-numeric input gracefully by printing a message and exiting the program the following shown two execution of the program
 Enter Hours : 20
 Enter Rate : nine
 Error, please enter numeric input
 Enter hours : forty
 Error, please enter numeric input. (06 Marks)

OR

- 2 a. Explain conditional execution, Alternative execution chained conditionals and nested conditionals with examples. (08 Marks)
 b. Explain break and continue statement with examples in python. (04 Marks)
 c. Explain with an example what are fruitful functions and void functions. (04 Marks)

Module-2

- 3 a. Explain while and for loops with examples. (04 Marks)
 b. Write a python program to find the largest value from the given set of accepted values. (06 Marks)
 c. Discuss the string handling methods in python with examples. (06 Marks)

OR

- 4 a. Write a python program to check whether a given string is palindrome or not. (06 Marks)
 b. Explain with example the syntax of read (), write () methods for a file. (04 Marks)
 c. Develop a python program for creating a copy an existing file. (06 Marks)

Module-3

- 5 a. Explain the difference between a list and a dictionary. (04 Marks)
 b. Make a list of first ten letters of the alphabet then using the slice operation do the following:
 i) Print the first three letters from the list
 ii) Print any three letters from the middle
 iii) Print the letters from 5th letters to the end of the list. (04 Marks)
 c. Discuss the lists handling functions in python with example. (08 Marks)

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OR

- 6 a. Differentiate between list and dictionary. (08 Marks)
b. Define tuple, explain DSU pattern. Write a python code to determinate tuples by sorting a list of words from longest to shortest using loops. (04 Marks)
c. Explain the need of Regular expressions in python language. (04 Marks)

Module-4

- 7 a. Explain classes and attributes in python language with examples. (05 Marks)
b. Explain pure functions and modifiers with examples. (05 Marks)
c. Write a program that uses class to store the name and marks of students. Use list to store the marks in three subjects. (06 Marks)

OR

- 8 a. Explain initialization method with example. (04 Marks)
b. Write a class Rectangle that has attributes length and breadth and a method area which returns the area of the rectangle. (06 Marks)
c. What is operator overloading? Write python code to overload “+” “-” and “*” operator by providing the methods `__add__`, `__sub__` and `__mul__`. (06 Marks)

Module-5

- 9 a. Write a python code for retrieving the romeo.txt file from the web and compute the frequency of each word in the file. (06 Marks)
b. Write a note on XML. (05 Marks)
c. Explain with a neat diagram of Service Oriented Architecture. (05 Marks)

OR

- 10 a. Describe creation of database table using database cursor architecture. (08 Marks)
b. Write a python code for creating employee database, inserting records and selecting the employees working in the company. (08 Marks)
