

Sixth Semester B.E. Degree Examination, June/July 2018
Water Resources Management

Time: 3 hrs.

Max. Marks: 80

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

Module-1

- 1 a. With a sketch, explain hydrologic cycle. (08 Marks)
b. Give a summary on global water resources and Indian water resources. (08 Marks)

OR

- 2 a. With a sketch, explain confined and un-confined aquifer. (08 Marks)
b. What is water scarcity? Summarize the contributing factors of water scarcity. (08 Marks)

Module-2

- 3 a. Explain the necessity of water resources planning and management. (08 Marks)
b. Explain the spatial and temporal scales of planning and management. (08 Marks)

OR

- 4 a. With a typical analytical frame work for water resources management studies, explain inception, development and selection phases. (08 Marks)
b. Summarize the questions addressed in adaptive integrated policy an activities of water resources planning and management. (08 Marks)

Module-3

- 5 a. With a sketch showing the components, explain the principles of integrated water resources management (IWRM). (08 Marks)
b. Explain the guiding principles : Dublin statement and Rio declaration of integrated water resources management. (08 Marks)

OR

- 6 a. With a figure of three pillars: Economic efficiency, equity and environmental sustainability, explain the implementation process of IWRM. (08 Marks)
b. Summarize the sectors benefited by IWRM. (08 Marks)

Module-4

- 7 a. Explain the existing legal framework and constitutional provisions for water in India. (08 Marks)
b. Explain the various deficiencies in the existing legal framework of water resources development in India. (08 Marks)

OR

- 8 a. Summarize the salient features of Indian National Water Policy 2012. (08 Marks)
b. Summarize the scope of Water User's Association (WUA) and list it's functions. (08 Marks)

Module-5

- 9 a. What is rainwater harvesting? Explain the needs for rainwater harvesting. (08 Marks)
b. Explain the different types of lining done to control seepage in Ponds. (08 Marks)

OR

- 10 a. What is Percolation tank? Describe the general guidelines to be followed in proposing a percolation tank. (08 Marks)
b. Briefly explain the various techniques of rain water harvesting in urban area. (08 Marks)

Sixth Semester B.E. Degree Examination, Dec.2018/Jan.2019
Water Resources Management

Time: 3 hrs.

Max. Marks: 80

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

Module-1

- 1 a. Explain Hydrologic cycle, with neat sketch. (08 Marks)
b. What is an Aquifer? Explain various types of aquifers with sketches. (08 Marks)

OR

- 2 a. What is Scarcity of water? Give causes and effects of scarcity of water. (08 Marks)
b. Write a detailed note on Indian water resources. (08 Marks)

Module-2

- 3 a. Explain the need of Water Resources Management. (06 Marks)
b. Give three approaches of planning. Discuss the advantages of each one. (10 Marks)

OR

- 4 a. List various aspects of planning of water resources. Explain in detail. (08 Marks)
b. In adaptive integrated policies, which are the questions to be answered by the planners and managers? (08 Marks)

Module-3

- 5 a. Give Integrated Water Resources Management (IWRM) definition as put up by Global Water partnership (GWP). Also give Dublin principles. (08 Marks)
b. Explain types and forms of private sector involvement in IWRM. (08 Marks)

OR

- 6 a. Explain the frame work of IWRM , developed by GWP , consisting of three 'E's. (08 Marks)
b. Give IWRM tools of implementation. (08 Marks)

Module-4

- 7 a. Write in detail about National Water policies. (08 Marks)
b. Give a broad roadmap for implementation of water policies. (08 Marks)

OR

- 8 a. Write a note on “the role of community based organization” in WRM. (08 Marks)
b. Explain Water laws, Policies and Administration in India. (08 Marks)

Module-5

- 9 a. Explain various methods of Rain water harvesting. (08 Marks)
b. Write in detail about Micro catchment, with neat sketch. (08 Marks)

OR

- 10 a. Give details of farm pond, as a water harvesting structure. (08 Marks)
b. How percolation tanks help in water harvesting? Give the design considerations for the same. (08 Marks)

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

Module-1

- 1 a. Write a detailed note on availability of 'Global Water Resources' and distribution of 'Global Fresh Water'. (08 Marks)
b. Explain 'Major', 'Medium' and 'Minor' water basins in India and list a minimum of six major water basins identified in our country. (08 Marks)

OR

- 2 a. Explain water balance equation and its importance. (08 Marks)
b. Explain the process of 'Hydrologic Cycle' along with representative diagram. (08 Marks)

Module-2

- 3 a. Explain in detail the necessity of water resources planning and management. (08 Marks)
b. Write a detailed note on post planning and management issues to be addressed in case of a river valley development project. (08 Marks)

OR

- 4 a. What are the planning and management aspects in case of water resource development project? (06 Marks)
b. Explain in detail the following:
i) Top-down approach of water resource planning and management.
ii) Demand based bottom-up approach of water resource management. (10 Marks)

Module-3

- 5 a. Analyze the four basic principles of "Integrated Water Resources management" recommended as per Dublin's International conference on 'Water and Environment' (1992). (10 Marks)
b. Comment on the 'Role of Government' in providing 'Enabling Environment' for achieving integrated water resource management in our country. (06 Marks)

OR

- 6 a. Bring out the advantages/disadvantages of private sector involvement in the field of water resources management. (08 Marks)
b. Explain the process of 'integrated water resources management' involving integration of natural water system and human system. (08 Marks)

Module-4

- 7 a. Elaborate the salient features included in the 'National Water Policy (2002)' and discuss the water sector reforms needed to be adopted in India. (10 Marks)
b. Discuss the role of 'Water user associations' and its effectiveness for effective water governance and management of water resources. (06 Marks)

OR

- 8 a. Write a detailed note on existing legal framework for water and constitutional provisions for water usage by the citizens of India. (08 Marks)
- b. Elaborate the role of local institutions and its importance for good water governance. (08 Marks)

Module-5

- 9 a. Define the term 'Rain Water Harvesting'. Elaborate Rural technological systems being adopted for water conservation. (08 Marks)
- b. Explain the design principles for small water harvesting structures for a micro catchment. (08 Marks)

OR

- 10 a. What is ground water recharge? With neat sketches explain
i) Basin method and ii) Pit method of Ground Water recharge. (10 Marks)
- b. Explain the importance of water harvesting and conservation along with basic principles involved in the process. (06 Marks)

Sixth Semester B.E. Degree Examination, Dec.2019/Jan.2020
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Max. Marks: 80

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

Module-1

- 1 a. Explain Hydrologic cycle, with a neat sketch. (08 Marks)
b. Explain briefly Indian Water Resources. (08 Marks)

OR

- 2 a. What is meant by Water scarcity? Discuss reasons for water scarcity problems. (08 Marks)
b. Explain different types of aquifers. Also explain the different water bearing formations. (08 Marks)

Module-2

- 3 a. State the necessity of Water Resources Planning and Management. (08 Marks)
b. Explain system components used in Water Resource Planning. (08 Marks)

OR

- 4 a. Discuss Planning and Management aspects. (08 Marks)
b. Explain approaches used in Water Resource Planning. (04 Marks)
c. Explain Post Planning and Management Issues. (04 Marks)

Module-3

- 5 a. Define IWRM. Mention Dublin principles of IWRM. (08 Marks)
b. Explain process of Implementation of IWRM. (08 Marks)

OR

- 6 a. Explain Legislative and Organizational Frame work in IWRM. (08 Marks)
b. Discuss types and forms of Private Sector involvement in IWRM. (08 Marks)

Module-4

- 7 a. What is meant by Water Governance? State the need of Water Governance. (08 Marks)
b. Mention the necessity of National Water Law. (08 Marks)

OR

- 8 a. Explain salient features of National Water Policy 2012. (08 Marks)
b. Explain Irrigation Management Transfer policies and activities. (08 Marks)

Module-5

- 9 a. Explain briefly any two Rain water Harvesting Techniques. (08 Marks)
b. Explain Micro – Catchments Rain water Harvesting. (08 Marks)

OR

- 10 a. Explain design steps for percolation Tank in RWI. (08 Marks)
b. List and explain the factors influencing Yield from a catchment (08 Marks)