

CBCS SCHEME

MODEL QUESTION PAPER

15CV661: Water Resources Management

Time: 3 hours

Max. Marks: 80

**MODULE-1**

- 1 a) With a sketch, explain Hydrologic cycle **8Mks**  
b) What is water scarcity? What are the contributing factors of water scarcity? **8Mks**

**OR**

- 2 a) With a sketch, explain confined and un-confined aquifer? **8Mks**  
b) A lake has a water surface elevation of 103.2m above datum at the beginning of certain month. In that month the lake received an average inflow of  $6.0\text{m}^3/\text{sec}$  from the surface runoff sources. In the same period the outflow from the lake had an average value of  $6.50\text{m}^3/\text{sec}$ . Further in that month, the lake received a rainfall of 145 mm and the evaporation of the lake surface was estimated as 61 mm. Write the water budget equation for the lake and calculate the water surface elevation of the lake at the end of the month. The average lake surface area can be taken as 5,000 ha. Assume that there is no contribution to and from ground water storage? **8Mks**

**MODULE-2**

- 3 a) Explain the necessity of water resource planning and management? **8Mks**  
b) What are the system components of water resources management? Explain Top down approach and Bottom up approach of integrated management policy? **8Mks**

**OR**

- 4 a) Explain the Technical, Institutional, Economic and financial aspects of water resources planning and management? **8Mks**  
b) Write the description of questions addressed in adaptive integrated policy on activities of water resources planning and management? **8Mks**

**MODULE-3**

- 5 a) With a sketch containing the components, explain the concept of Integrated Water Resources Management(IWRM)? **8Mks**  
b) Explain the guiding principles: Dublin statement and Rio Declaration of Integrated water resources management? **8Mks**

**OR**

- 6 a) Narrate the sectors benefited by Integrated Water Resource Management(IWRM) **8Mks**  
b) Explain the legislative and institutional/organization framework of IWRM? **8Mks**

**MODULE-4**

- 7 a) Explain the existing legal framework and constitutional provisions for water in India? **8Mks**  
b) Explain the necessity of national law on water? **8Mks**

**OR**

- 8 a) Write a note on National Water Commission (NWC) and its divisions? **8Mks**  
b) What is the scope and functions of Water User's Association (WUA)? **8Mks**

**MODULE-5**

- 9 a) Explain rain water harvesting and its components of collection, storage, application and optimum utilization? **8Mks**  
b) Explain the different types of lining done to control seepage in ponds? **8Mks**

**OR**

- 10 a) Explain the different storage structures of water harvesting? **8Mks**  
b) Briefly explain the various techniques of rain water harvesting in urban area? **8Mks**