No. of Printed Pages : 2

BICEE-015

B.Tech. CIVIL ENGINEERING (BTCLEVI)

Term-End Examination

June, 2015

00276

BICEE-015 : WATER RESOURCES SYSTEM PLANNING AND DESIGN

Time : 3 hours *Maximum Marks : 70*

Note : *Answer any **seven** questions. All questions carry equal marks. Use of scientific calculator is allowed.*

1. Discuss in detail, the systems planning approach in Water Systems Engineering. *10*

2. What do you understand by water system dynamics ? Explain. *10*

3. What are the various objectives of water systems planning ? Discuss in detail. *10*

4. Discuss the various economic and econometric principles generally employed in water systems engineering. *10*

5. What do you understand by hydrologic input and demand analysis ? Explain with a relevant example. *10*

6. Discuss the different design and management issues in hydrologic analysis. *10*

7. 20 million m^3 of water is available for irrigation of two crops. Crop A requires 9000 m^3 water/ha and generates a net income of ₹ 720/ha. Crop B requires 6000 m^3 water/ha and generates a net income of ₹ 1,200/ha. Crop A and B are limited to 1,600 ha and 2,400 ha, respectively. Using Linear Programming, determine the amount of land to be planted with crop A and B. *10*

8. Write short notes on the following : *2×5=10*

   (a) Large Scale System Analysis

   (b) Optimization Methods in Water Resources Systems

9. How is regional planning of ground water systems carried out ? Discuss using a relevant case study. *10*

10. What is the purpose of ground water system planning ? Discuss its advantages and the various approaches adopted for carrying it out. *10*