

**B.Tech. CIVIL ENGINEERING (BTCLEVI)**

**Term-End Examination**

**June, 2018**

00808

**BICEE-015 : WATER RESOURCES SYSTEM  
PLANNING AND DESIGN**

*Time : 3 hours*

*Maximum Marks : 70*

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*Note : Attempt any **seven** questions. All questions carry equal marks. Use of scientific calculator is permitted. Assume missing data, if any.*

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1. Define systems. Explain different types of systems. 10
  
2. What is the necessity of regional planning ? Explain in detail. 10
  
3. What is system analysis ? What are the basic problems in system analysis ? 10
  
4. Explain water system dynamics in detail. 10

5. Discuss the linear programming models commonly used in water resources engineering. 10
  6. What is dynamic programming ? Explain. 10
  7. Two crops are grown on a land of 200 ha. The cost of raising crop one is 3 unit/ha, while for crop two, it is 1 unit/ha. The benefit from crop one is 5 unit/ha and from crop two, it is 2 unit/ha. A total of 300 units of money is available for raising both the crops. What should be the cropping plan in order to maximize the total net benefits ? 10
  8. What is multi-objective planning ? Explain. 10
  9. How is the analysis of a large scale system carried out ? Provide a relevant case study. 10
  10. Explain the various policy issues in groundwater systems planning and development. 10
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