

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

**Term-End Examination**

**December, 2016**

00503

**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.*

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1. What are the various issues faced by water systems engineers ? How does systems planning approach help to resolve these issues ? 10
2. Discuss the economic and econometric principles used in water systems engineering. 10
3. What is the role of stochastic planning and management in water systems engineering ? Explain in detail. 10
4. What do you understand by hydrologic input and demand analysis ? Discuss in detail. 10

5. What is the necessity of optimization in water resources planning ? Explain with the help of relevant examples. 10
6. Discuss the applications of dynamic programming models in water resources planning, with the help of a case study. 10
7. What do you understand by large-scale system analysis ? Write a case study to support your answer. 10
8. How do we carry out water quality management planning ? Discuss using relevant example. 10
9. What is the necessity of conjunctive surface and ground water development ? Explain in detail. 10
10. Write short notes on the following : 10
- (a) Water System Dynamics
  - (b) Multi-objective Planning
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