

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

**Term-End Examination**

**June, 2018**

00773

**BICE-015 : WATER RESOURCES ENGINEERING**

*Time : 3 hours*

*Maximum Marks : 70*

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

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1. (a) Describe the components of diversion type canal headwork. 7
  - (b) Discuss the design procedure of Bligh's creep theory. 7
  2. (a) Define and describe the different types of spillways. 7
  - (b) What is an Aquifer ? Derive the expression of discharge for an unconfined aquifer. 7
  3. (a) What are the advantages of canal lining ? List out the different lining materials. 7
  - (b) What do you understand by canal fall ? Discuss its importance in detail. 7

4. (a) How are the cross drainage works classified ? Discuss them with neat diagrams. 7
- (b) Describe the features of a river training work. 7
5. (a) Explain the types of diversion headworks. 7
- (b) List out the different types of canal outlets and discuss them in detail. 7
6. (a) Explain the hydrological cycle with neat sketch. 7
- (b) Define precipitation. Explain its importance in the study of hydrology. 7
7. (a) Describe the various components of a barrage with neat sketches. 7
- (b) Explain the different types of dams with neat sketches. 7
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