

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

**Term-End Examination**

**December, 2017**

00792

**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) Distinguish between Short-term and Long-term runoff. 4
  - (b) Explain the various methods of flood prediction. 10
  2. (a) Describe the various types of irrigation systems. 7
  - (b) Explain the various zones of reservoir storage. 7
  3. (a) With the help of a neat sketch, describe the various components of a weir. 7
  - (b) Describe the different components of canal outlets. 7

4. (a) Explain the various configurations of dam systems. 10
- (b) What is meant by canal escapes ? 4
5. (a) Describe the various intake structures for a canal system with the help of neat sketches. 10
- (b) Explain the necessity of irrigation. 4
6. (a) An artesian tubewell has a diameter of 20 cm. The thickness of aquifer is 30 m and its coefficient of hydraulic conductivity is 36 m/day. Find its yield under a drawdown of 4 m at the well face. Use Sichardt's formula for radius of influence. ( $R = 3000 S \sqrt{K}$ , S = drawdown, K is the coefficient of hydraulic conductivity) 7
- (b) What are the causes of failure of gravity dams ? 7
7. (a) How is reservoir planning carried out ? Explain in detail. 10
- (b) What is a Hydrograph ? 4
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