

Code :R5320104

**R5**

**III B.Tech II Semester(R05) Supplementary Examinations, April/May 2011**  
**WATER RESOURCES ENGINEERING-II**  
(Civil Engineering)

Time: 3 hours

Max Marks: 80

**Answer any FIVE questions**  
**All questions carry equal marks**

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1. (a) Sketch the general layout of a diversion headworks and explain the functions of various components.  
(b) Explain the methods of regulation of a weir or a barrage.
2. Design a Sarda type fall for the data, fall height = 1.7 m, canal discharge = 25 cumecs bed width = 20 m, canal depth = 1.6 m.
3. Design an open flume outlet with a discharge of 0.07 cumecs on a distributary channel with a full supply depth of 1.0 m. The available working head is 0.20 m.
4. (a) What are different types of aqueducts based on the canal cross-section at the crossing. Where will you adopt each type.  
(b) What is transition. What is its purpose. Discuss various methods for the design of transitions.
5. (a) Write any four advantages and four disadvantages of earthen dams.  
(b) Explain various types of reservoirs with neat sketches.
6. (a) What is a gallery? Mention any five purposes of providing gallery in dams.  
(b) Mention the criteria to find the base width of the elementary profile of the gravity dam. Also derive expressions for base width by considering these criteria.
7. (a) How do you decide the section of a zoned earth dam if the following materials are available:
  - i. Only silty clay is available.
  - ii. Only fine gravel or coarse sand is available.  
(b) Explain the necessity of slope protection in earthen dams. How do you protect upstream and downstream slopes of an earthen dam?
8. Write short notes on:
  - (a) Straight drop spillway
  - (b) Side channel spillway
  - (c) Ogee spillway
  - (d) Priming devices for siphon spillways.

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