

B.Tech III Year II Semester (R13) Regular & Supplementary Examinations May/June 2017  
**WATER RESOURCES ENGINEERING – II**  
(Civil Engineering)

Time: 3 hours

Max. Marks: 70

**PART – A**  
(Compulsory Question)

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- 1 Answer the following: (10 X 02 = 20 Marks)
- Name any two canal falls.
  - What is a cross drainage work?
  - What is stage discharge curve?
  - Give any two causes of meandering.
  - What is demand curve?
  - How do you classify the dams based on use?
  - What is a gallery? Give any two purposes for which a gallery is formed in the dam.
  - Give any two seepage control measures with respect to earth dam.
  - What is meant by priming and depriming with respect to spillways?
  - What are load factor and capacity factors?

**PART – B**  
(Answer all five units, 5 X 10 = 50 Marks)

**UNIT – I**

- 2 Design a Sarda type fall for the following data:
- Full supply discharge  $\frac{u/s}{d/s} = 40 \text{ cumecs.}$
- Full supply level :  $\frac{u/s}{d/s} = \frac{218.30 \text{ m}}{216.80 \text{ m}}$
- Full supply depth :  $\frac{u/s}{d/s} = \frac{1.8 \text{ m}}{1.8 \text{ m}}$
- Bed width :  $\frac{u/s}{d/s} = \frac{26 \text{ m}}{26 \text{ m}}$
- Bed level :  $\frac{u/s}{d/s} = \frac{216.50 \text{ m}}{215.00 \text{ m}}$
- Drop : 1.5 m
- Design the floor on Bligh's theory taking coefficient of creep = 8.  
Safe exit gradient may be taken as 1.5.

OR

- 3 (a) Give the classification of aqueducts and siphon aqueducts.  
(b) Explain cross drainage work admitting the drainage water into the canal.

**UNIT – II**

- 4 List out various methods of discharge measurement and explain any one method in detail.

OR

- 5 (a) What are Groynes? Also mention the various types.  
(b) What is meandering? Also give its general features.

**UNIT – III**

- 6 Give the necessity of controlling sediment in a reservoir. Explain the various methods available to control it.

OR

- 7 How do you select a particular type of dam based on various physical factors?

**UNIT – IV**

- 8 (a) What is single step method?  
(b) When do you call a gravity dam as high gravity dam and low gravity dam?

OR

- 9 (a) Discuss in brief the causes of failure of earth dams.  
(b) Write a note on filter criteria for earth dam.

**UNIT – V**

- 10 What is a spillway? What are its functions? Enumerate various types of spillways.

OR

- 11 Explain pumped storage plants and runoff river plants.

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