Code: CE6T3

III B.Tech - II Semester – Regular Examinations – May 2017

WATER RESOURCES ENGINEERING-II
(CIVIL ENGINEERING)

Duration: 3 hours   Max. Marks: 70

PART – A

Answer *all* the questions.   All questions carry equal marks

11x 2 = 22 M

1.

a) State any four objectives of diversion head works.

b) Explain the importance of downstream pile.

c) State any three basic design requirements of a gravity dam.

d) What is the significance of earth dams in India?

e) What do you understand by priming and de-priming?

f) Briefly explain the reservoir sedimentation.

g) What is the purpose of providing canal falls?

h) What are the criteria of site selection for designing of canal fall?

i) Name the different types of falls and state their suitability of application.

j) What is cross drainage works?

k) What do you understand by level crossing?

PART – B

Answer any *THREE* questions. All questions carry equal marks.

$$3 \times 16 = 48 \text{ M}$$

2. a) What is meant by scour? What precautions do you take against it in weir design? **8 M**

   b) Explain Khosla's method of independent of variables. How do you apply corrections for (i) thickness of floor, (ii) indication of floor and (iii) interference of piles? **8 M**

3. a) Annual runoff in terms of depth over catchment area of 1675 sq-km of a reservoir is given below:-

Year	1962	1963	1964	1965	1966	1967	1968	1969
Runoff(cm)	98	143.5	168.3	94	95.3	152.4	110	131.3

Draw the flow mass of diagram. What is the average yield from the catchment? What should be the live storage capacity of reservoir to use the source fully? If the dead storage is 20% of the live storage, what is the gross storage? Mark the filling and emptying periods on the mass curve. **8 M**

   b) What is the necessity of temperature control in gravity dam? How is temperature controlled and explain about Inspection galleries. **8 M**

4. a) What is a spillway? What is its importance? Explain
   different types of spillways. 8 M

   b) State and explain any six components of earth dam. 8 M

5. a) Describe an ogee fall and rapid fall with neat sketch. 8 M

   b) Design the size and number of notches required for a canal
   drop with the following particulars:
   Full Supply discharge = 20 cumecs
   Bed width   = 14 m
   F.S. Depth   = 1.9 m, Half supply depth = 1.5m
   Assume any other data if required. 8 M

6. a) What is the purpose of providing a cross-drainage
   structure? What are the various types of cross drainage
   structures? 8 M

   b) Explain the method of fixation of water way of drain in an
   aquaduct? 8 M