PVP 14

Code: CE6T3

III B.Tech-II Semester–Regular/Supplementary Examinations–March 2018

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) Which soils are ideal for Irrigation?
   b) Explain factors effecting duty?
   c) Discuss about gravity Dam?
   d) What is the relation between Bligh's creep co-efficient (c) and hydraulic gradient?
   e) Explain various types of reservoirs?
   f) Illustrate the use of providing fish ladder?
   g) Discuss various forces that act on the arch dam?
   h) What is the use of silt excluder and silt extractor?
   i) Illustrate the use of providing canal drop or canal fall?
   j) Write a note on ogee shaped spillway?
   k) When overturning failure occurs in dams?

PART – B

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

3 x 16 = 48 M

2. a) Explain causes and failures of hydraulic structures on permeable foundation? 8 M

b) Briefly explain Khosla's theory? How do you apply corrections for i) thickness of floor ii) interference of piles? 8 M

3. a) Describe in brief various investigations required for reservoir planning? 8 M

b) A dam 6 m high and 1.5 m wide at the top has vertical water face. Find the base width of the dam if no tension is to develop. Take unit weight of the masonry as 20 kN/m^3 and c = 1.

Investigate the stability of the above dam if the coefficient of friction is 0.6 and maximum allowable compression stress is 1800 kN/m^2. 8 M

4. a) Explain the method of checking the stability of earth dam foundation against shear failure. 8 M

b) A round crested spillway passes a design discharge of $1m^3$/sec per meter length. The coefficient of discharge may be taken as $C_d = 0.7$. If the height of the crest above the downstream stilling basin floor level is 10 m, design the i) depth and ii) length of the stilling basin. Depth of the flow in the on the downstream of the spillway is 1m at the design discharge of $1m^3$/sec. Enquire if the bed of stilling basin has to be depressed. 8 M

5. a) What do you understand by rigid module? Describe the working of Gibb's module. 8 M

b) Explain the procedure of designing Sardar type fall. 8 M

6. a) Describe with the help of sketches various types of cross drainage works. 8 M

b) Explain the cross-drainage structure to be adopted based on H.F.L of drain and F.S.L of the canal? 8 M