Code No: **R1641012** **R16** **Set No. 1**

IV B.Tech I Semester Supplementary Examinations, July/Aug - 2021

WATER RESOURCES ENGINEERING - II

(Civil Engineering)

Time: 3 hours **Max. Marks: 70**

Question paper consists of Part-A and Part-B
Answer ALL sub questions from Part-A
Answer any FOUR questions from Part-B

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PART–A *(14 Marks)*

1. a) Write short note on 'Field Capacity' and 'wilting point'. [3]
   b) Distinguish between a contour canal and a ridge canal. [2]
   c) Write a short note on Montague type fall. [2]
   d) Briefly explain Bligh's creep theory. [3]
   e) Explain various types of reservoir. [2]
   f) Discuss in brief the causes of failure of earth dams. [2]

PART–B *(4x14 = 56 Marks)*

2. a) Explain various irrigation efficiencies. [7]
   b) What are the factors affecting duty? How can duty be improved? [7]

3. a) Describe Lacey's theory for the design of irrigation channel in alluvial soil. [7]
   b) Design an irrigation channel to carry a discharge of 5 cumec. Assume N = 0.0225 and m = 1. The channel has a bed slope of 0.2 m per kilometer. [7]

4. a) What are the different types of cross drainage works that are necessary on a canal alignment? State briefly the conditions under which each one in used. [7]
   b) Explain the method of fixation of water way of drain in an aqueduct. [7]

5. a) Give Bligh's approximate method of determining uplift pressure under the floor of a cross drainage work. [7]
   b) Explain with help of diagram, the various component parts along with their functions of diversion headwork. [7]

6. a) Explain the method of determining principal and shear stresses in a gravity dam. [7]
   b) Discuss with a neat sketch, various storage zones of a dam reservoir. [7]

7. a) What are the different types of earth dams that are usually adopted? [7]
   b) Compute the discharge over an ogee spillway with a coefficient of discharge C=2.5 at a head of 4 m. The effective length of the spillway is 100 m. Neglect the velocity of approach. [7]