PVP 14

Code: CE5T3

III B.Tech - I Semester – Regular/Supplementary Examinations
October 2018

WATER RESOURCES ENGINEERING - I
(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) Outline the various types of precipitation.

   b) Define (i) Infiltration (ii) Evaporation.

   c) What is a synthetic hydrograph?

   d) For a steam flow relate stage-discharge relationship?

   e) Define (i) Aquifer (ii) Aquifuge.

   f) Write about different types of wells?

   g) Enumerate the functions of irrigation water in raising crops?

   h) List the standards of quality for Irrigation water.

   i) Define the term reclamation of soils.

   j) Elaborate Regime channel.

   k) What is canal lining?

PART – B

Answer any ***THREE*** questions. All questions carry equal marks.
3 x 16 = 48 M

2. a) A catchment area has seven rain gauges stations. The annual rainfall recorded by the gauges was 1200, 1420, 1180, 1085, 1650, 1020 and 1500 mm. For a 5 percent error in the estimation of the mean rainfall, calculate the minimum number of additional rain gauge stations required in the catchment. 8 M

b) Differentiate between evaporation, transpiration and evapotranspiration. 8 M

3. a) Explain the following methods for developing hydrographs. 8 M
(i) S-curve method (ii) Synthetic Unit hydrograph

b) Write about the procedure for flood routing by Muskingum method? 8 M

4. a) Compute an expression for discharge from a well full penetrating in an unconfined aquifer. 8 M

b) A 35 cm diameter well penetrates 25 m below the static water table. After 24 hours of pumping at 5500 liters per minute, the water level in a test well at 100 m away is lowered by 0.6 m and in the well 30 m away, the drawdown is 1.1 m. Evaluate the transmissibility of the aquifer? 8 M

5. a) Appraise various methods in which the irrigation water can be applied to the fields with neat diagrams. 8 M

b) Define duty, and explain how do you improve duty? 8 M

6. a) Analyze Lacey's silt theory and explain design procedure. 8 M

b) Assess the necessity of canal lining? Describe various types of linings used for canal. 8 M