Code :R7310104

R7

III B.Tech I Semester(R07) Supplementary Examinations, May 2011
WATER RESOURCES ENGINEERING-I
(Civil Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE questions
All questions carry equal marks
⋆ ⋆ ⋆ ⋆ ⋆

1. (a) Draw a diagram and explain float type automatic rain-gauge.

   (b) Give the advantages and disadvantages of recording rain gauges.

2. Describe various methods of estimating evaporation from water bodies.

3. The hourly ordinates of a two hour unit hydrograph are given below. Derive a 6 hours unit hydrograph for the same catchment.

Time (hours)	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
Discharge (cumecs)	0.0	1.0	2.7	5.0	8.0	9.8	9.0	7.5	6.3	5.0	4.0	2.9	2.1	1.3	0.5	0.0

4. (a) Explain the principle of discharge measurement in the electromagnetic induction and ultrasonic methods.

   (b) How are the discharges adjusted when they are measured under unsteady flow conditions?

5. (a) Explain the terms "storage coefficient', and 'coefficient of transmissibility'

   (b) During a recuperation test, the water in an open well was depressed by pumping by 2.5 m and it recuperated 1.8 m in 80 minutes. Calculate the yield from a well 4 m diameter under a depression head of 3m

6. (a) Discuss briefly the factors affecting the choice of the method of irrigation.

   (b) Write an essay on the scope of irrigation engineering as practiced in India.

7. (a) What is consumptive use of water ? Describe any two methods for determining the consumptive use of water.

   (b) What is the soil water tension? Distinguish between the soil water tension and soil water stress.

8. (a) Write a brief note on inundation canals.

   (b) Design an irrigation channel to carry a discharge of 10 cumec. Assume N = 0.0225 and m=1.The channel has a bed slope of 0.3 m per kilometer.

⋆ ⋆ ⋆ ⋆ ⋆