

Total No. of Questions : 6]

SEAT No. :

P4868

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T.E./Insem. - 101**T.E. (Civil)****HYDROLOGY AND WATER RESOURCE ENGINEERING****(2012 Pattern) (Semester - I)***Time : 1 Hour]**[Max. Marks : 30**Instructions to the candidates:*

- 1) Answer Q1 or Q2, Q3 or Q4, Q5 or Q6.
- 2) Neat diagrams must be drawn wherever necessary.
- 3) Figures to the right side indicate full marks.
- 4) Assume Suitable data if necessary.

UNIT - I

- Q1)** a) Explain all forms of precipitation. [5]
- b) Explain dilution technique for measuring stream discharge. [5]

OR

- Q2)** a) The average annual rainfalls in cm at four existing rainguage stations in a basin are 105, 79, 70 and 66 If the average depth of rainfall over the basin is to be estimated within 10 % error, determine the additional number of gauges needed. [6]
- b) State various types of precipitation & explain cyclonic precipitation. [4]

UNIT - II

- Q3)** a) State various advantages of Drip Irrigation. [4]
- b) The following data gives details of various crops grown in culturable area of 2000 hectares . Determine the discharge. [6]

Sr.	Crop	Irrigation intensity	Kor period in days	Kor depth in cm
1	Wheat	40%	16	15
2	Jowar	50%	10	12

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OR

- Q4)** a) Explain various factors on which the duty of water for crop depends. [5]
b) State the various methods of assessment of water charges and compare their merits and demerits. [5]

UNIT - III

- Q5)** a) Explain [4]
i) Aquifer
ii) Aquiclude
iii) Specific yield of an aquifer
iv) Porosity of soil
- b) Calculate the diameter of the well that will have a discharge of 300 litre/sec. with a drawdown of 6 m in a unconfined aquifer of thickness of 40 m. The radius of influence is 300 m and the coefficient of permeability is 100 m/day. [6]

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OR

- Q6)** a) Discuss the assumptions and limitations of Dupit's theory. [5]
b) Explain with a neat sketch division of subsurface water. [5]

