Total No. of Questions : 6]

SEAT No. :

P4868

[Total No. of Pages : 2

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

P.T.O.

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]**

OR

Q6) a) Discuss the assumptions and limitations of Dupit's theory. **[5]**

b) Explain with a neat sketch division of subsurface water. **[5]**