

Total No. of Questions : 6]

SEAT No. :

P1

[Total No. of Pages : 2

Oct.-16/T.E./Insem.-1

T.E. (Civil) (Semester - I)

HYDROLOGY AND WATER RESOURCES ENGINEERING

(2012 Pattern)

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) Draw a neat sketch of a float type recording rain gauge and explain its working. [5]
- b) Enumerate various methods of stream gauging and explain with neat sketch Area Velocity method? [5]

OR

- Q2)** a) Calculate the optimum numbers of rain gauge stations for the given catchment with following data. Assume the error in rainfall calculation as 10% [6]

Stations	A	B	C	D
Rainfall in mm	700	500	300	400

- b) What are the water resources of India? Explain in brief. [4]

Unit - II

- Q3)** a) State various advantages of Irrigation. [4]

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- 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

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 200 litre/sec with a drawdown of 6 m in a confined aquifer of thickness of 40 m. The radius of influence is 300m and the coefficient of permeability is 80m/day. [6]

OR

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

