Total No. of Questions :6]

SEAT No. :

P5053

[Total No. of Pages : 2

T.E./Insem.-601
T.E. (Civil) (Semester - I)
HYDROLOGY AND WATER RESOURCES ENGINEERING
(2015 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 indicate full marks.***
4) ***Assume suitable data, if necessary.***

Q1) a) Explain in brief various forms of precipitation. **[5]**

b) Explain the different factors affecting evaporation of water from reservoir. **[5]**

OR

Q2) a) Discuss the construction and applications of DAD curves with neat sketch. **[5]**

b) In a basin a 10 hrs storm rainfall gives the following depths. **[5]**

Rainfall (hr)	1	2	3	4	5	6	7	8	9	10
Depth of Water (cm)	2.0	2.75	6.5	4.0	9.5	5.0	8.2	10.0	5	1.5

The surface runoff resulting from the above storm is equivalent to 22.5 cm of depth over the basin. Calculate average infiltration index for the basin.

Q3) a) What is duty? State factors affecting & explain methods of improving duty. **[6]**

b) Write merits & demerits of drip irrigation system. **[4]**

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OR

Q4) a) List various methods of assessing canal revenue. Explain volumetric basis method with merits & demerits. **[5]**

b) A water course has a culturable commanded area of 1500 hectares. The intensity of irrigation for crop A is 45% and for B is 40%, both the crops being rabi crops. Crop A has a kor period of 20 days and crop B has kor period of 15 days. Calculate the discharge of water course if the kor depth for crop A is 10 cm and for B it is 16 cm. **[5]**

Q5) a) Define the following terms: **[5]**

i) Specific Yield of an acquifer.

ii) Transmissivity.

iii) Aquifuge.

iv) Aquatard

v) Porosity.

b) Differentiate between shallow wells and deep wells. **[5]**

OR

Q6) a) What are the assumption made in the analysis of radial flow towards a well. Derive a relation for the discharge of a well in a recuperation test. **[6]**

b) During a recuperation test, the water level in an open well was depressed by pumping by 3m and it recuperated to 2.0m in 90 minutes.

i) Determine the yield from a well of 5m diameter under a depression head of 3.5m.

ii) Also find out the diameter of the well to yield 12 l/sec under a depression head of 2.5m.

[4]