

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]

P.T.O.

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 aquifer.
 - 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]

