

Code: 9A01503

B.Tech III Year I Semester (R09) Supplementary Examinations June 2017

WATER RESOURCES ENGINEERING – I

(Civil Engineering)

Time: 3 hours

Max. Marks: 70

Answer any FIVE questions
All questions carry equal marks

- 1 (a) What are the various types of precipitation?
(b) Explain Thiessen Polygon method.
- 2 (a) What is meant by evaporation and list the various factors which affect evaporation?
(b) Explain Blaney Criddle formula.
- 3 (a) What are the various components of runoff? Explain each.
(b) Explain dilution technique of stream flow measurement.
- 4 (a) What is a Unit Hydrograph? List the assumptions involved in the unit hydrograph theory.
(b) Given below are the ordinates of a 6-h unit hydrograph for a catchment. Calculate the ordinates of the DRH due to a rainfall excess of 3.5 cm occurring in 6 hr.

Col(1)	0	3	6	9	12	15	18	24	30	36	42	48	54	60	69
Col(2)	0	25	50	85	125	160	185	160	110	60	36	25	16	8	0

Here Col(1) indicates Time(h)

And Col (2) indicates U.H ordinates in m³/s.

- 5 (a) List the various methods of drilling used for constructing tube wells. Describe any one of these methods in detail.
(b) A tracer took 15 hr to travel from well A to B which are 120 m apart. The difference in their water table elevation was 0.9 m. The porosity of the aquifer is 30%. Calculate: (i) Hydraulic conductivity.
(ii) Intrinsic permeability.
- 6 (a) Describe in detail the border strip method of irrigation
(b) What is Land Grading? Write the necessity of it and also explain land clearing.
- 7 (a) Define base period, crop period, intensity of irrigation and cash crops.
(b) Water is released at the rate of 5 cumecs at the head sluice. If the duty at the field is 100 hectares/cumec and the loss of water in transit is 30%, find the area of the land that can be irrigated.
- 8 (a) List the various types of linings. Discuss the salient features of cement concrete lining.
(b) Distinguish between:
 - (i) Alluvial soil and non-alluvial soil.
 - (ii) Mean velocity and critical velocity.
