

Code No: RT22354

R13**SET - 1**

II B. Tech II Semester Supplementary Examinations, November-2017
SURFACE WATER HYDROLOGY
(Agricultural Engineering)

Time: 3 hours

Max. Marks: 70

- Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)
2. Answer **ALL** the question in **Part-A**
3. Answer any **THREE** Questions from **Part-B**
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PART -A

1. a) Define precipitation, indicating its various types.
b) Explain clearly Rainfall interception and Infiltration capacity
c) What is rating curve? Explain its use.
d) Define and explain the time of concentration and Period of surface runoff.
e) Explain flood plain mapping
f) Define flood routing.

PART -B

2. a) What is meant by rain gauges and what is their use?
b) Enumerate the different types of rain gauges, and describe with a neat sketch, the construction and functioning of the non-recording type of gauge being used in India.
3. a) Explain the difference between evaporation, interception and transpiration. What is transpiration ratio?
b) Discuss Dalton's law for evaporation from water surfaces. For a large water surface, explain the influence of depth on the rate of evaporation.
4. a) Name the different methods, which can be applied for extending a rating curve, and the circumstances under which a particular method is to be adopted. Explain briefly any one of these methods.
b) What is a stage discharge curve? How is it affected by a changing stage of the river compared to a constant stage?
5. a) Mention the basic assumptions in the theory of unit hydrograph. Explain step by step the method of construction of unit hydrograph from a storm of unit duration.
b) What is distribution graph? If a unit hydrograph for a storm of particular duration is available, how would you construct a unit graph for a storm of another duration?
6. a) Define a Unit Hydrograph and explain how is it used to estimate the flood hydrograph of a storm of a given magnitude and of the same duration.
b) What is S-curve hydrograph? How is it constructed, and what is it used for?
7. Differentiate between the following: (i) Hydraulic routing and hydrologic routing (ii) Channel routing and reservoir routing (iii) Prism storage and wedge storage (iv) Inflow hydrograph and the outflow hydrograph