

B.Tech. Civil (Construction Management)

Term-End Examination

00873

December, 2018

ET-535(A) : ELEMENTARY HYDROLOGY

Time : 3 hours

Maximum Marks : 70

Note : Attempt any five questions. All questions carry equal marks. Use of scientific calculator is permitted.

1. (a) Discuss the various hydrologic processes that form hydrologic cycle. 7
- (b) What do you understand by precipitable water ? Explain as to how you would estimate it for an area. 7
2. (a) Describe the construction and working of a snow-sampling equipment. 7
- (b) The average annual precipitation for the four sub-basins of a basin are 72, 88, 110 and 100 cm. The corresponding areas are 300, 250, 400 and 600 km². Determine the average rainfall for the complete basin. 7

3. (a) Describe the effect of the following factors on evaporation : $7\frac{1}{2}$
- (i) Radiation
- (ii) Humidity
- (iii) Depth of water body
- (b) Describe the construction and working of ISI Standard Evaporation Pan. $6\frac{1}{2}$
4. (a) What is infiltration ? Describe in brief the factors that affect infiltration. 7
- (b) The rainfall depth recorded during the successive 20-minute intervals of a storm are 3, 10, 15, 10, 10, 8 and 4 mm. Determine the ϕ -index, if the resulting run-off is 28 mm. 7
5. (a) What is flow duration curve ? Discuss the important characteristics of flow duration curve. 7
- (b) Describe the procedure of estimation of snowmelt. 7
6. (a) Describe the construction and working of recording stream gauging station. 7
- (b) Explain the process of run-off production in regions of high infiltration rate. 7

7. Write short notes on any **four** of the following :

$$4 \times 3 \frac{1}{2} = 14$$

- (a) Specific Humidity and Relative Humidity
 - (b) Structure of Atmosphere
 - (c) Unit Hydrograph
 - (d) Forms of Precipitation
 - (e) Symon's Rain Gauge
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