

The Assam Royal Global University, Guwahati

Royal School of Engineering and Technology

B. Tech 6th Semester

Semester End Examination, July 2021

Course Title: Hydrology & Water Resources Engineering

Course Code: CEE022C601

Time: 3 Hours

Maximum Marks: 70

Note: Attempt all questions as per instructions given

The figures in the right-hand margin indicate marks.

SECTION – A

Q.1. Attempt *all questions*. 2 x 8

- a. List some activities in which Hydrological studies are important.
- b. What is base flow?
- c. What are anticyclones?
- d. What do you mean by catchment area?
- e. Define Probable Maximum Precipitation
- f. Define an aquifer and an aquitard.
- g. Define specific yield of an aquifer.
- h. What are spillways?

Q.2. Answer *any two* of the following. 6 x 2

- a. Describe the Hydrologic cycle with neat sketch.
- b. "Evaporation pans are not exact models of large reservoirs and have some drawbacks."
What are the drawbacks?
- c. Discuss methods to reduce evaporation losses.

Q.3. Answer *any two* of the following. 7 x 2

- a. Describe the different forms of precipitation.
- b. A catchment area has seven rain-gauge stations. In a year, the annual rainfall recorded by the gauges are as follows:

Station	P	Q	R	S	T	U	V
Rainfall (cm)	130.0	142.1	118.2	108.5	165.2	102.1	146.9

For a 5% error in the estimation of mean rainfall, calculate the minimum number of additional stations required to be established in the catchment.

- c. Describe the different methods of recording rainfall.