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B.Tech.(CE) (2012 to 2017) (Sem.-7,8)

HYDROLOGY AND DAMS

Subject Code : BTCE-817

M.Code : 71876

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.**
3. **SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.**

SECTION-A

Q1. Answer briefly :

- Which type of recording rain gauge does not produce the mass curve of precipitation as record?
- What are apparatus available to measure the evaporation?
- Write the expression for the determination of peak discharge of a unit hydrograph according to Snyder's method.
- Calculate the Gumbel's reduced variate for a return period of 100 years.
- Define Isohyet.
- Write the equation for water budget method for determination of lake evaporation.
- List the different types of buttress dam.
- What is the function of drainage gallery in a gravity dam?
- Draw a neat sketch of an earth dam showing the rock toe component.
- What is the necessity of providing spillway in a dam?

SECTION-B

- Q2. What are the different methods available for determination of average rainfall over a catchment due to a storm? What are their merits and demerits?
- Q3. What are the limitations of flood frequency studies?
- Q4. What are the factors affecting the infiltration process? Discuss their role in determining the flood hydrograph due to a storm.
- Q5. Derive the value of best central angle for constant angle layout of an arch dam.
- Q6. Explain the different types of earth dam with neat sketch.

SECTION-C

- Q7. The ordinates of 2-hr unit hydrograph (UH) are given below. Determine the ordinates of an S-curve hydrograph and using this determine the ordinates of 4-hr unit hydrograph.

Time (hr)	0	2	4	6	8	10
2-hr UH ordinate (m^3/s)	0	25	100	160	190	170

Time (hr)	12	14	16	18	20	22
2-hr UH ordinate (m^3/s)	110	70	30	20	6	0

- Q8. How the force due to earthquake has effect on the stability of a gravity dam? Analyse critically with neat sketch regarding the earthquake force on gravity dam with respect to its magnitude, direction and location.
- Q9. How would you compute the discharge passing over an ogee spillway? What are the various factors affecting the coefficient of discharge in the discharge equation? Explain.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.