

Roll No.

Total No. of Pages : 02

Total No. of Questions : 09

B.Tech. (CE) (2011 Onwards E-I & II) (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 :

- a) Explain hydrological equation.
- b) What are the applications of unit hydrograph?
- c) What is meant by water balance of a catchment?
- d) Differentiate between yield and maximum flood discharge.
- e) State significance of inflection point on the recession side of the hydrograph.
- f) What are the disadvantages of flooding type infiltrometers?
- g) List advantages of gated spillways.
- h) Give Zanger's formula for hydrodynamic pressure.
- i) List advantages of Buttress dam.
- j) What do you mean by phreatic lines?

SECTION-B

- Q2. What is the function of hydrology in water resources development? What are the basic hydrological requirements for a river basin development?
- Q3. What are the factors which affect infiltration? Explain **any one** method of determining the infiltration capacity of a soil surface.
- Q4. The ordinates of 4-hr unit hydrograph for a particular basin are given below. Derive the ordinates of (i) S-curve hydrograph and (ii) the 2-hr unit hydrograph and plot them. Area of the basin is 630 km².

Time (hr)	Discharge (cumec)	Time (hr)	Discharge (cumec)
0	0	14	70
2	25	16	30
4	100	18	20
6	160	20	6
8	190	22	1.5
10	170	24	0
12	110		

- Q5. Briefly enumerate various methods for estimating runoff from rainfall.
- Q6. Explain difference among evaporation, transpiration and evapotranspiration. Bring out their significance in arid and humid region.

SECTION-C

- Q7. What are the different ways by which a concrete gravity dam may fail and how will you ensure its safety against each type of failure?
- Q8. Enumerate different types of buttress dams.
- Q9. What are different types of earth dams that are usually adopted? State where each type is adopted.

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.