No. of Printed Pages : 3

ET-535(A)

B.Tech. Civil (Construction Management)

00790

Term-End Examination

December, 2010

ET-535(A) : ELEMENTARY HYDROLOGY

Time : 3 hours *Maximum Marks : 70*

Note : ***All questions carry equal marks.***
Answer any ***five*** quesions.

1. (a) What is hydrologic cycle ? Draw neat block representation of a hydrologic system. **6**

   (b) Write short notes on any two of the following : **4x2=8**
   - (i) Precipitation
   - (ii) Interception
   - (iii) Infiltration
   - (iv) Transpiration

2. (a) Differentiate between specific humidity and relative humidity. **4**

   (b) Draw a labelled sketch showing structure of the atmosphere with temperature variations. **10**

3. (a) Briefly describe any three methods of estimation of 'Actual Evapotranspiration' and 'Potential Evapotranspiration.' **8**

(b) A reservoir with a surface area of 500 ha had the following average value of parameters during a week : water temperature =20°C, relative humidity=40% and velocity at 1m above the ground level = 16km/hr. Estimate the volume of water evaporated from the lake during the week, if saturation vapour pressure at 20°C, is17.54mm of Hg. 6

4 (a) Define Non-recording and recording types of rain gauges. Explain the functioning of Tipping - Bucket rain gauge. 8

(b) Explain various methods of average precipitation computation over a catchment area. 6

5. Define the following terms: 7x2=14

(i) Direct precipitation
(ii) Base flow
(iii) Interflow
(iv) Surface runoff
(v) Backwater effect
(vi) Unit hydrograph
(vii) Time of concentration.

6. Give steps involved in derivation of a unit hydrograph from a storm hydrograph. What are the limitations in the principle of unit hydrograph? 10+4

7. (a) Explain with the help of a neat sketch, the Float gauge recorder and stilling well installation. 7

(b) List Direct and Indirect computation of river discharge and explain the Area-Velocity method of discharge determination. 7