No. of Printed Pages : 3

ET-535(A)

B.Tech. Civil (Construction Management)

01930

Term-End Examination

June, 2014

ET-535(A) : ELEMENTARY HYDROLOGY

Time : 3 hours *Maximum Marks : 70*

Note : *Answer any **five** questions, all questions carrying equal marks. Give neat, well-labelled sketches. Answer in your own words.*

1. (a) State the assumptions underlying the theory of a unit hydrograph. *5*

(b) 4-hour ordinates of unit hydrograph are given as under. Derive the ordinates of an 8-hour unit hydrograph for the given basin. *9*

Time (hours)	Ordinate of 4-hour hydrograph
0	0
4	16
8	60
12	108
16	100
20	95
24	75
28	52
32	15
36	0

2. (a) Explain the process of formation of precipitation. *4*

(b) Draw a neat sketch of hydrologic cycle and explain in detail the role of the following : *10*

(i) Depression storage

(ii) Interception

(iii) Interflow

3. Define, explain and give the use of the following : *14*

(a) Standard project storm

(b) Probable maximum precipitation

(c) Maximum probable flood and its importance

4. (a) What do you understand by evaporation, actual evapotranspiration and potential evapotranspiration ? *6*

(b) Give, in detail, the two methods of estimating potential evapotranspiration, and one method of measuring evaporation. *3+3+2*

5. (a) Discuss in brief the factors that influence run-off over a catchment. *7*

(b) Describe the non-recording type of stream gauging system. *7*

6. (a) List the methods of measuring rainfall and explain any one of the methods. 5

(b) Explain in detail the Radar-based procedure to measure rainfall over the given catchment. 9

7. Write short notes on any ***four*** of the following : $4 \times 3\frac{1}{2} = 14$

(i) Snowfall-Water Equivalent

(ii) Depth Area Duration, vis-a-vis, a storm analysis

(iii) Soil types and infiltration

(iv) Vegetal cover and its effect on hydrological processes

(v) Infiltrometer

(vi) Arithmetical method of computing average rainfall