C 3098

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2007.

Sixth Semester

Civil Engineering

CE 1001 — HYDROLOGY

(Regulation 2004)

Time : Three hours   Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Differentiate Rainfall Mass Curve and Rainfall Hyetograph.

2. Define : Normal Annual Rainfall.

3. How Evapotranspiration differs from Evaporation?

4. What do you mean by Antecedent precipitation Index?

5. Sketch a typical hydrograph resulting from an isolated storm and identify the features.

6. Define : Synthetic Unit Hydrograph.

7. Distinguish Maximum Probable flood and Design flood.

8. List the uses flood routing.

9. How Aquifuge differs with aquifer?

10. Define : Transmissivity.

PART B — (5 × 16 = 80 marks)

11. (a) Explain the complete process of 'Hydrologic Cycle' with a neat sketch.

Or

(b) (i) What are the various forms of precipitation. (6)

(ii) Give the complete procedure to obtain the dependable rainfall of a city, using Frequency Analysis. You are given with a average annual rainfall fuse 30 years. (10)

12. (a) (i) Discuss the process of Evaporation. (8)

(ii) How to reduce Evaporation from water surfaces. (8)

Or

(b) What are the various methods available to measure the infiltration. Explain it using a neat sketch.

13. (a) (i) Explain the process of Base flow seperation with a neat sketch. (8)

(ii) What are the applications of unit Hydrograph. (8)

Or

(b) Define Unit Hydrograph. Write the assumptions and derive the Unit Hydrograph.

14. (a) Discuss in detail about the estimation of Return Period (T_r) of a Flood using Gumbel's distribution.

Or

(b) (i) What are the various methods available for Flood control. (8)

(ii) Write a short notes on "Muskingum's method of channel Routing". (8)

15. (a) Derive an expression for the steady state discharge of a well in an unconfined aquifer.

Or

(b) (i) Write the Dupuit's assumptions. (4)

(ii) Briefly describe the procedure and application of pumping and Recuperation Tests". (12)

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