Reg. No. : | | | | | | | | | | |

R 3134

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 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. What are the forms of precipitation?

2. Define the term probable maximum precipitation.

3. How will you reduce the reservoir evaporation?

4. Draw the infiltration capacity curve.

5. What is unit hydrograph?

6. State the advantages of s-curve hydrograph.

7. Define the term recurrence interval.

8. State the methods of flood control.

9. State Darcy's law for flow of fluid.

10. What is specific capacity of aquifer?

PART B — (5 × 16 = 80 marks)

11. (a) Explain the hydrological cycle with a neat sketch and state the hydrologic equation and explain its importance in Civil Engineering.

Or

(b) (i) Explain the various methods of measuring average rainfall over a basin. (8)

(ii) Describe the intensity, duration and frequency relationship with the curves. (8)

12. (a) (i) State Dalton's law of evaporation and also state the factors affecting evaporation losses. (8)

(ii) Describe any one method of measurement of evaporation. (8)

Or

(b) (i) Write short notes on infiltration idices and effective rainfall. (8)

(ii) Explain the experimental methods for finding infiltration capacity. (8)

13. (a) Define hydrograph. Explain the methods of separation of base flow from surface run off. (16)

Or

(b) Explain the method for the derivation of synthetic unit hydrograph with examples. (16)

14. (a) Discuss in detail about the Gumbel's method of finding recurrence interval of a storm with a example. (16)

Or

(b) What is flood routing? Explain the Muskingum's method of finding channel routing with a sketch. (16)

15. (a) (i) Explain the various types of aquifers with a neat diagram. (8)

(ii) Derive the equation for the steady radial flow into the unconfined aquifer. (8)

Or

(b) (i) Write short notes on Recuperation test. (8)

(ii) A 30 cm dia well penetrates 20 m below the static water table. After 24 hours of pumping at 5000 litres/min, the water level in a test well at 100 m away is lowered by 0.5 m, and in a well at 30 m away, the draw down is 1 m. What is the transmissibility of the aquifer? (8)