



B.E. DEGREE EXAMINATIONS: MAY 2015

(Regulation 2009)

Sixth Semester

CIVIL ENGINEERING

CEE212: Hydrology

Time: Three Hours

Maximum Marks: 100

Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

1. The nearest object from a rain gauge should be at a minimum distance equal to
 - a) its height
 - b) twice its height
 - c) thrice its height
 - d) four times its height
2. A cyclic trend present in the rainfall data can be ascertained from
 - a) depth-area-duration curve
 - b) double mass curve
 - c) intensity-duration curve
 - d) moving average curve
3. w-index will be always
 - a) less than ϕ -index
 - b) equal to ϕ -index
 - c) a constant fraction of ϕ -index
 - d) more than ϕ -index
4. Interception loss when expressed as percent of storm rainfall
 - a) increases with increase in storm rainfall
 - b) decreases with decrease in storm rainfall
 - c) decreases with increase in storm rainfall
 - d) is dependent of storm rainfall
5. The concept of unit hydrograph was first introduced by
 - a) Dalton
 - b) Horton
 - c) Sherman
 - d) Thiessen
6. The S-curve hydrograph is used
 - a) to estimate the peak flood flow of a basin of any other desired duration
 - b) to convert unit hydrograph of any duration into a unit hydrograph of any other desired duration
 - c) to develop synthetic unit hydrograph of any other desired duration
 - d) to derive the unit hydrograph from complex storms

22. a) (i) Discuss the various factors affecting infiltration. (10)
(ii) Write short note on depression storage. (4)

(OR)

- b) (i) Describe the direct methods of computing evapotranspiration. (10)
(ii) What are infiltration indices? (4)

23. a) Determine the 6-hr unit hydrograph ordinates from the given 3-hr unit hydrograph ordinates:

Time(hr)	0	3	6	9	12	15	18	21	24
Ordinates (cumecs)	0	4	12	25	18	12	7	4	0

(OR)

- b) Derive a 3 hr synthetic unit hydrograph of a basin with following data: Basin area = 3000 km², length of the main stream = 120 km, distance from centroid of the basin to the outlet = 63 km. The Snyder's coefficients C_t and C_p may be assumed to be 1.60 and 0.64 respectively.

24. a) Explain the method of estimating a recurrence interval using Gumbel's distribution method with suitable example.

(OR)

- b) Derive the Muskingum routing equation and the expressions for the routing coefficients.

25. a) A well of 0.5 m diameter penetrates fully into a confined of thickness 20 m and hydraulic conductivity 8.2×10^{-4} m/s. What is the maximum yield expected from this well if the drawdown in the well is not to exceed 3 m. The radius of influence may be taken as 260 m.

(OR)

- b) During a recuperation test, the water level in an open well was depressed by pumping by 2.5 m and is recuperated by an amount of 1.6 m in 70 minutes. Determine the yield from a well of 3 m diameter under a depression head of 3.5 m.
