JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- 2026

B.Tech-VI Semester (CE)

COURSE CODE (CREDITS): 23B11CE611 MAX. MARKS: 15

COURSE NAME: WATER RESOURCE ENGINEERING

COURSE INSTRUCTOR: DR.NIRAJ SINGH PARIHAR MAX. TIME: 1 Hour

Note: *(a) All questions are compulsory.*

(b) The candidate is allowed to make Suitable numeric assumptions wherever required for solving the problems.

(c) Use of calculator is allowed.

Q.No	Question	CO	Marks
Q1	Answer the following in brief: a) Explain the water-budget equation and its components. b) Mention the requisite conditions for the occurrence of precipitation. c) Differentiate between frontal and non-frontal precipitation. d) Calculate the probability of a 10 year flood to occur at least twice in the next 4 years.	CO1,2	**[1]** **[1]** **[1]** **[2]**
Q2	A square catchment area has its left lowermost coordinates as (0,0) and its stretch is of 4 km.s. The rainfall stations installed have coordinates (1,1), (1,3), (3,3) and (3,1) with precipitations of 5, 10, 8 and 12 cm.s respectively. Determine the mean precipitation using Theissen's polygon method.	CO1	**[3]**
Q3	In a certain river basin, there are 4 rain gauge stations with their normal annual precipitations recorded as 750, 560, 440 and 400 mm respectively. Determine the optimum no. of rain gauge stations required to limit the error in calculation of mean precipitation to 8%.	CO1	**[3]**
Q4	Discuss the working of any one type of recording rain gauge with the help of a representative figure.	CO1	**[4]**

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