JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- 2026

M.Tech I[st] Semester (CE)

COURSE CODE (CREDITS): 14M31CE113 (3) MAX. MARKS: 15

COURSE NAME: Water Supply and Treatment

COURSE INSTRUCTORS: Dr. Rishi Rana Kalia MAX. TIME: 1 Hour

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

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

(c) ***Use of Calculator allowed***

Q.No	Question	CO	Marks
Q1	What is peak hour demand and how does it affect the design of water supply system?	CO-1	2 Marks
Q2	The population data for a town is given below. Find out the population for next 3 decades using incremental increase method and decrease rate of growth methods respectively:	CO-1	4 Marks
Q3	In two periods of each 20 years, a city has grown from 70,000 to 2, 90,000 and then to 4, 50,000. Determine the saturation population, the equation of logistic curve and the expected population after next 20 years.	CO-2	3 Marks
Q4	The design annual rainfall for the catchment of a proposed reservoir has been computed to be 115 cm. the catchment area has been estimated to have the mean annual temperature of 25°C. The catchment area contributing to the proposed reservoir is 1550 sq.km. Calculate the annual design yield for this reservoir, make necessary assumptions.	CO-2	2 Marks
Q5	Explain the significance of E-coli in water analysis?	CO-2	2 Marks
Q6	A nitrous acid has a degree of ionization of 6.5%. Given Ka= 5.1×10^{-4} and pKa=3.29, calculate the molar concentration of nitrous acid?	CO-1	2 Marks

Year	Population
1930	25,550
1940	75,283
1950	90,000
1960	145,000
1970	286,000

(14)