

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -3EXAMINATION- 2025

B.Tech-VI Semester (CE)

COURSE CODE (CREDITS):18B1WCE634

MAX. MARKS: 35

COURSE NAME: Transportation Engineering

COURSE INSTRUCTORS: Dr. Amardeep

MAX. TIME: 2 Hours

Note:(a)All questions are compulsory.

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

Q.No	Question	CO	Marks
Q1	A transition curve is to be provided for a circular railway curve of 300 m radius, the gauge is 1.5 m with the maximum superelevation restricted to 15 cm. What is the length of the transition curve for balancing the centrifugal force?	CO-3	6
Q2	Define a railway yard and discuss the various types of yards?	CO-4	5
Q3	Give the classification of stations to their location in station yard along with suitable Sketches?	CO-5	5
Q4	a) Differentiate between port and harbor. b) What considerations are taken in selecting the location of a harbor?	CO-5	6
Q5	A runway is being constructed in a new airport as per the International Civil Aviation Organization (ICAO) recommendations. The elevation and the airport reference temperature of this airport are 535 m above the mean sea level and 22.65°C respectively. Consider the effective gradient of the runway as 1%. The length of the runway required for a design-aircraft under the standard conditions is 2000 m. Within the framework of applying sequential corrections as per the ICAO recommendations, calculate the length of the runway corrected for the given temperature.	CO2	6
Q6	The runway length required for landing at sea level under standard atmospheric conditions is 2400 m, and the runway length required for takeoff under standard atmospheric conditions is 2700 m. The airport site has an effective elevation of 250 m, and the airport reference temperature is 24°C. The standard atmospheric temperature for 250 m elevation is 15°C, and the runway slope is 0.5%. Determine the runway length after corrections.	CO2	7