JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -3 EXAMINATIONS-2022

B.Tech-VI Semester (Civil)

COURSE CODE (CREDITS): 18B1WCE634 MAX. MARKS: 35

COURSE NAME: Transportation Engineering

COURSE INSTRUCTORS: Dr. Amardeep MAX. TIME: 2 Hours

Note: *All questions are compulsory. Marks are indicated against each question in square brackets.*

Q1. What do you mean by harbour? What are the different site selection criteria for harbour? (8)

Q2. Differentiate between harbor and port on the basis of their application. Also explain different types of port and harbor. (6)

Q3. Explain the following in details: (9)

a) Calvert and ICAO lighting system.

b) Different design consideration to the visual aids for the taxiway.

c) Different types of runway along with their application.

Q4. Which of the following is also known as another name of inner rail? (1)

a) Slope rail

b) Fixed rail

c) Gradient rail

d) Cant rail

Q5. Which of the following occurs when train travels at a speed greater than equilibrium speed on a curve? (1)

a) Cant deficiency

b) Cant excess

c) Cant gradient

d) Rate gradient

Q6. A curve of 600 m radius on a BG section has a limited transition of 40 m length. Calculate the maximum permissible speed and superelevation for the same. The maximum sectional speed (MSS) is 100 km/h. (3)

Q7. Calculate the maximum permissible speed on a 1° curve on a Rajdhani route with a maximum sanctioned speed of 130 km/h. The superelevation provided is 50 mm and the transition length is 60 m. The transition length of the curve cannot be increased due to the proximity of the yard. (3)

Q8. Explain the simplified method along with its different steps for calculating permissible cant and speed. (2)

Q9. Calculate the superelevation, maximum permissible speed, and transition length for a 3° curve on a high-speed BG section with a maximum sanctioned speed of 110 km/h. Assume the equilibrium speed to be 80 km/h and the booked speed of the goods train to be 50 km/h. (2)