

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -3 EXAMINATION- JUNE 2024

COURSE CODE (CREDITS): 18B1WCE634

MAX. MARKS: 35

COURSE NAME: Transportation Engineering

COURSE INSTRUCTORS: Dr. Amardeep

MAX. TIME: 2 Hour

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

*(b) Marks are indicated against each question in square brackets.*

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

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Q1. Two high-level platforms are to be provided on the inside as well as the outside of a  $2^\circ$  curve on a BG track with a superelevation of 100 mm. What should the required extra clearances for these platforms, both on the inside and the outside of the curve, be? (Length of bogie = 21,340 mm, c/c bogie distance = 14,785 mm, height of platform = 840 mm.) [CO-2] (5)

Q2. Write short notes on the following.

(a) Gradient in station yard

(b) Objectives for gradients

(c) Momentum gradient [CO-3] (3)

Q3. Tabulate different limiting values of various parameters concerning curves. [CO-3] (3)

Q4. Explain any four obligatory points controlling railway alignment. [CO-1] (2)

Q5. Please explain the following along with net sketches (if any): [CO-4] (6)

a) A crossing Junction

b) A Junction Station

c) A terminal Station

Q6. Draw a typical layout of an airport in India and show locations of runway, Taxi Way, Apron, Airport Building, Parking and Circulation Area. [CO-4] (2)

Q7. Following is the average wind data for ten years, when wind intensity is above 6 km/hr. An airport is to be designed for two runways. Determine the best runway orientation and calculate total wind coverage. [CO-4]

Wind direction	Percentage of time
N	6.5
NNE	10.4
NE	8.0
ENE	4.2
E	1.7
ESE	0.6
SE	0.7
SSE	3.9
S	7.5
SSW	14.5
SW	10.2
WSW	5.9
W	4.2
WNW	0.3
NW	0.2
NNW	4.8

(5)

Q8. Please explain the following:

[CO-4] (6)

- a) Apron and Hanger Lighting
- b) Boundary lighting
- c) Design consideration to be applied to the visual aids for the taxiway

Q9. What are the docks? Discuss in detail along with their different types and their application.

[CO-5]

(6)