Total number of printed pages: **Civil Engineering (D)/V/DCE505**

2022

TRANSPORTATION ENGINEERING

Full Marks: 100

Time: Three hours

The figures in the margin indicate full marks for the questions.

*Answer **any five** questions.*

1.	a)	Draw the cross section of road and mention its components. Briefly explain about each component.	5
	b)	What were the suggestions given by Jayakar committee for road development?	5
	c)	Explain the characteristics of road transportation	10
2.	a)	Explain different types of road.	5
	b)	What are the requirements of an ideal road alignment?	5
	c)	Explain different factors controlling highway alignment.	10
3.	a)	What are the purposes of providing Camber on the road?	5
	b)	Give the different values of Camber for different types of road in areas with heavy and low rainfall.	5
	c)	Explain different types of Kerbs with a neat sketches.	10
4.	a)	Give the values of width recommended for different classes of roads as per IRC.	5
	b)	Design speed of the road is 80 kmph. Calculate Stopping Sight Distance. Assume all other data suitably.	5
	c)	On a two lane road with two way traffic conditions, vehicle A is moving with a speed of 80 kmph and vehicle B is moving with a speed of 65 kmph. Both vehicles are moving in the same direction on the same lane. Acceleration of vehicle A is 0.9 m/s^2. Calculate the Overtaking Sight Distance required.	10
5.	a)	What are the implementations as per the recommendations of Jayakar committee?	5

	b)	Calculate the safe SSD required for a design speed of 50 kmph on a two way traffic single lane road.	5
	c)	On a single lane road with one way traffic conditions, two vehicles are moving with a speed of 100 kmph and 60 kmph. Acceleration of a fast moving vehicle is 0.95 m/s^2. Calculate the OSD required.	10
6.	a)	Draw the cross section of the railway track and mention its components.	5
	b)	What are the requirements of a good railway track?	5
	c)	Explain the functions of each component of the railway track.	10