

JK Lakshmipat University Jaipur
INSTITUTE OF ENGINEERING AND TECHNOLOGY
 End Term Examination (Regular), Batch: 2019-23, December 2021
 B. Tech. in Civil Engineering, Semester V

Roll No.....

CE1109: Transportation Engineering

Time: 2 hours

Max. Marks: 30

Instructions to students:

1. Do not write anything other than your roll number on question paper.
2. Assume suitable data wherever required and mention it clearly.
3. Writing appropriate units, nomenclature, and drawing neat sketches/schematics/ flow chart wherever, required are an integral part of the answer.

1.		
i.	'Often it is said that threat to pavement is water and only due to water'. Comment.	2.5 CO1
ii	Define cant and cant deficiency. Calculate the length of transition curve for a B.G. track having 5° deflection and a cant of 14 cm. The max-permissible speed on the curve track is 50 Kmph.	05 CO5

Q.2	The speed of overtaking and overtaken vehicles is 80 and 40 kmph, respectively on a two way traffic road. The average acceleration during overtaking may be assumed as 0.99 m/sec^2 . (a) Calculate safe overtaking sight distance (b) What is minimum length of overtaking zone? (c) Draw a neat- sketch of the overtaking zone and show the position of the sign post.	7.5 CO3
Q.3	A road is provided with a horizontal circular curve having deflection angle of 55° and center line radius of 250 m. A transition curve is to be provided at each end of the circular curve of such a length that the rate of gain of radial acceleration is 0.3 m/s^3 at a speed of 50 km per hour. Determine the Length of the transition curve required at each of the ends.	05 CO3

Q.4	What do you understand by adzing of sleepers? What are the desirable qualities or requirements of good sleepers? A B.G. track has a sleeper density of $n+6$. If the track is laid with welded rails of 26 m length. Find out the number of sleepers required for a railway track of 1690 m.	05 CO4
Q.5	In a single lane road, two cars are approaching from the opposite directions at a speed of 60 kmph and 80 kmph. If the coefficient of friction between the road	05 CO3

	surface and the tyres is 0.35, determine the minimum sight distance required to avoid a head-on-collision of two cars.	
	OR	
Q.5	What are the significant recommendation of Jayakar committee report? Briefly outline the classification based on the location and function as suggested in the Nagpur Road plan.	05 CO1,02