

Course code: 23CE6T02

BONAM VENKATA CHALAMAYYA INSTITUTE OF TECHNOLOGY &
SCIENCE

(AUTONOMOUS)

III-B.Tech II-Semester Regular Examinations (BR23), April - 2026

Subject: Highway Engineering

Time: 3 Hours

Branch: Civil Engineering

Max. Marks: 70

Question Paper consists of Part-A and Part-B

Answer ALL the questions of Part-A

Part-B consists of 5 questions with either/or choice, answer any one from either/or choice

PART-A (10X2 = 20M)

Q. No.	Questions	Marks	CO	BL
1.	a) List any four classifications of roads in India.	2	CO1	BL1
	b) What are radial road network patterns?	2	CO1	BL2
	c) Define vertical curve.	2	CO2	BL1
	d) List types of gradients.	2	CO2	BL1
	e) Define capacity of highways.	2	CO3	BL1
	f) Define Passenger Car Unit (PCU).	2	CO3	BL2
	g) Define CBR.	2	CO4	BL2
	h) Explain types of bituminous materials.	2	CO4	BL2
	i) Define flexible and rigid pavements.	2	CO5	BL1
	j) List functions of pavement layers.	2	CO5	BL1

PART-B (5X10 = 50M)

Q. No	Questions	Marks	CO	BL
2.	Explain in detail various road development plans in India and their achievements.	10M	CO1	BL2
Or				
3.	Briefly explain about the factor influencing highway alignment	10M	CO1	BL3
4.	a) Explain briefly stopping sight distance, overtaking sight distance and intermediate sight distance.	6M	CO2	BL3
	b) Calculate stopping sight distance for a vehicle travelling at 80kmph with reaction time 2.5 sec and coefficient of friction 0.35.	4M		
Or				
5.	a) Explain in detail Vertical curves.	4M	CO2	BL3
	b) Explain design of super elevation and extra widening. Design super elevation for a curve of radius 250 m and speed 50kmph.	6M		
6.	a) Explain Webster's Method.	4M	CO3	BL2
		6M		BL3

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	b) Explain types of intersections			
Or				
7.	Explain LOS concept and its application in highway planning.	10M	CO3	BL4
8.	Explain Marshall mix design with detailed procedure.	10M	CO4	BL3
Or				
9.	Discuss types of bituminous mixes and their applications.	10M	CO4	BL3
10.	Explain types of pavements and design factors.	10M	CO5	BL4
Or				
11.	Explain IRC method for low volume flexible pavements.	10M	CO5	BL3

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