

Code: 20CE3502

**III B.Tech - I Semester – Regular / Supplementary Examinations
NOVEMBER 2023**

**HIGHWAY ENGINEERING
(CIVIL ENGINEERING)**

Duration: 3 hours

Max. Marks: 70

Note: 1. This paper contains questions from 5 units of Syllabus. Each unit carries 14 marks and have an internal choice of Questions.

2. All parts of Question must be answered in one place.

BL – Blooms Level

CO – Course Outcome

			BL	CO	Max. Marks
UNIT-I					
1	a)	Describe the significant recommendations of Jayakar Committee Report? Mention how this helped in road development in India?	L2	CO1	7 M
	b)	With neat sketches show various road patterns.	L3	CO1	7 M
OR					
2	a)	Explain briefly the salient features of Nagpur Road Plan.	L2	CO1	7 M
	b)	Explain various factors affecting the alignment of any road project.	L2	CO1	7 M
UNIT-II					
3	a)	List out the factors affecting geometric design of roads and explain them briefly.	L2	CO2	7 M
	b)	Explain the following: i) Camber ii) Skid and Slip	L2	CO2	7 M

OR					
4	a)	How are spot speed studies carried out? What are the various objects and applications of spot speed studies? Explain briefly.	L2	CO2	7 M
	b)	With neat sketches show various types of traffic signs.	L3	CO2	7 M
UNIT-III					
5	a)	Draw a neat sketch of a full cloverleaf and show the movement of traffic.	L3	CO3	7 M
	b)	What is rotary intersection? Explain the advantages and disadvantages of rotary intersection.	L2	CO3	7 M
OR					
6	a)	Explain CBR and the test procedure to determine CBR value of soil sample in the laboratory.	L2	CO3	7 M
	b)	What are the various tests carried out on bitumen? Briefly mention the principle and uses of each test.	L1	CO3	7 M
UNIT-IV					
7	a)	What are the factors to be considered for the design of flexible pavements? Discuss significance of each.	L2	CO4	7 M
	b)	Explain “Flexible and Rigid pavements and bring out the points of difference”.	L2	CO4	7 M
OR					

8	a)	Draw a sketch of flexible pavement cross section and show the component parts. Enumerate the functions of each component of the pavement.	L3	CO4	7 M
	b)	Explain the concept of 'ESWL'.	L2	CO4	7 M
UNIT-V					
9	a)	Explain the materials, specification and procedure for construction of WBM roads.	L2	CO5	7 M
	b)	Explain the objectives, type of materials, method of application of: i) Prime Coat ii) Tack Coat	L2	CO5	7 M
OR					
10	a)	Explain the mechanics of soil stabilization.	L2	CO5	7 M
	b)	Explain the principle, scope and factors affecting the properties of soil-lime stabilization.	L2	CO5	7 M