R20 Regulation *Subject code:3E5AA*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A+' Grade)

B.Tech V Semester Supplementary Examinations, May 2025

TRANSPORTATION ENGINEERING

(CE)

Maximum Marks: 70 Date: 26.06.2025 Duration: 3 hours

Note: **1.This question paper contains two parts A and B.**
2. Part A is compulsory which carries 20 marks. Answer all questions in Part A.
3. Part B consists of 5 Units. Answer any one full question from each unit.
4. Each question carries 10 marks and may have a, b, c, d as sub questions.

ALLOW IRC 37 CODE BOOK

	Part-A			
All the following questions carry equal marks (10X2M=20 Marks)		Marks	CO	BTL
1	Write about index map in a highway project?	2M	1	L1
2	Draw neat sketches of various road patterns.	2M	1	L1
3	Write about horizontal transition curves?	2M	2	L1
4	Write about over taking zones.	2M	2	L1
5	What are the different types of traffic signal systems?	2M	3	L1
6	List out various measures that may be taken to prevent accidents.	2M	3	L1
7	Write in brief about traffic island.	2M	4	L1
8	What are the requirements of at grade Intersection?	2M	4	L1
9	On what factors does the selection of base and surface course depend upon?	2M	5	L1
10	What are the general causes of pavement failures?	2M	5	L1
	Part-B			
Answer All the following questions. (5X10M=50Marks)		Marks	CO	BTL
11	Discuss the classification of roads as per Nagpur road plan.	10M	1	L2
	OR			
12	Write briefly about highway project report?	10M	1	L2
13	Find out the length of transition curve length for the following data. Radius of horizontal curve =400m. Design speed = 100kmph, length wheel base = 6.2m, number of lanes = 2, location at the rain fall = heavy, terrain condition = hilly, super elevation is introduced by rotating the edges with reference to centre line and the rate of introduction of super elevation is 1 in 150. Width of highway is 7m.	10M	2	L2
	OR			
14	Derive the expression for super elevation and explain with the help of neat sketches.	10M	2	L2
15	Distinguish between collision and condition diagrams with neat sketches.	10M	3	L2
	OR			

16	Explain about speed and delay study. What are the different methods of conducting speed and delay studies?	10M	3	L2
17	What is Channelization? Explain the importance with its advantages and disadvantages.	10M	4	L2
	OR			
18	What are the design factors that control the design of rotary intersection and explain them in detail?	10M	4	L2
19	Explain the design procedure of flexible pavements as per IRC method.	10M	5	L2
	OR			
20	Explain about the different types of stresses that need to be considered in Rigid Pavements.	10M	5	L2