R20 Regulation *Subject code: 3E5AA*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech V Semester Regular/Supplementary Examinations, February 2024

TRANSPORTATION ENGINEERING

CIVIL ENGINEERING

Maximum Marks: 70 Date:24.02.2024 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.

	Part-A	CO	Bloom Tx
All the following questions carry equal marks (10x2M=20 Marks)			
1	Explain the role of kerb.	1	II
2	What are the different types of road network patterns	1	I
3	Sketch the typical cross section of highway	2	II
4	Define super elevation	2	I
5	Write a short note on mechanical counters in traffic volume studies	3	I
6	What are the various traffic controls required at an intersection	3	I
7	What are the types of at-grade intersection?	4	I
8	What are the advantages & limitations of CBR Method of design?	4	I
9	Differentiate between tack coat & prime coat.	5	II
10	How the execution is done in highway construction?	5	I
	Part-B		
Answer All the following questions. (5X10M=50Marks)			Bloom Tx level
11	a) Explain different road networks with neat sketch. [5m] b) Explain briefly about obligatory points in highway alignment. [5m]	1 1	II II
	OR		
12	a) Discuss briefly the outline of classification of roads as per Nagpur road plan. [5m] b) Compare the advantages & disadvantages of road transportation with other modes of transportation. [5m]	1 1	II IV
13	a) Explain PIEV theory and the total reaction time of the driver. [5m] b) Calculate the length of transition curve and the shift, when design speed is 80kmph, radius of circular curve is 250m, allowable rate of super elevation is 1in 150 and pavement width including extra widening is 7.5m. [5m]	2 2	II III
	OR		
14	a) What are the objects of highway geometric design? List the various geometric elements to be considered in highway design. [5m] b) Derive an expression for finding the stopping sight distance. [5m]	2 2	I III

15	a) What are the various types of road markings commonly used? What are the uses of each. [5m] b) Explain different types of road traffic signals. [5m]	3 3	II II
	OR		
16	a) Explain various measures that may be taken to prevent accidents. [5m] b) List the various traffic engineering studies. Mention the importance. [5m]	3 3	II II
17	Draw & explain the different types of at grade and grade separated intersections? [10m]	4 4	II IV
	OR		
18	a) What is rotary intersection? List out the advantages & disadvantages of rotary intersection. [5m] b) Briefly explain the factors influencing intersection design. [5m]	4 4	I II
19	a) Explain the components in typical flexible pavement structure from the bottom to top with a neat sketch. [5m] b) What are the basic materials used for construction of roads, enlist the various tests to be carried out. [5m]	5 5	III II
	OR		
20	a) Write down step to step procedure of flexible pavement design as suggested by IRC. [5m] b) Explain in detail types of stresses developed in rigid pavement. [5m]	5 5	II II