



R20 Regulation

Subject code:3E5AA

# TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

## B.Tech V Semester Supplementary Examinations, December 2024

### TRANSPORTATION ENGINEERING (Civil Engineering)

Maximum Marks: 70

Date:06.01.2025

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 which carries 10M.
  4. Each question carries 10 marks and may have a, b, c, d as sub questions.

#### Part-A

| All the following questions carry equal marks (10X2M=20) Marks) |                                                                            | CO | Bloom Tx |
|-----------------------------------------------------------------|----------------------------------------------------------------------------|----|----------|
| 1                                                               | Write about index map in a highway project?                                | 1  | L1       |
| 2                                                               | Draw neat sketches of various road patterns.                               | 1  | L1       |
| 3                                                               | Write about horizontal transition curves?                                  | 2  | L1       |
| 4                                                               | Write about over taking zones.                                             | 2  | L1       |
| 5                                                               | What are the different types of traffic signal systems?                    | 3  | L1       |
| 6                                                               | What are the various causes for road accidents?                            | 3  | L1       |
| 7                                                               | Write in brief about traffic island.                                       | 4  | L1       |
| 8                                                               | What are the requirements of at grade Intersection?                        | 4  | L1       |
| 9                                                               | On what factors does the selection of base and surface course depend upon? | 5  | L1       |
| 10                                                              | What are the general causes of pavement failures?                          | 5  | L1       |

#### Part-B

| Answer All the following questions. (5X10M=50Marks) |                                                                                                                                                                                                   | CO | Bloom Tx |
|-----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|----------|
| 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                                                  | What are the various factors controlling the geometric elements of a highway? [10M]                                                                                                               | 2  | L2       |
| OR                                                  |                                                                                                                                                                                                   |    |          |
| 14                                                  | Calculate the safe stopping distance for design speed of 50 kmph for two-way traffic on a two lane road. Assume coefficient of friction as 0.35 and reaction time of driver as 2.5 seconds. [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 | Explain about un-channelized and channelized intersections with neat sketches. [10M]                                           | 4 | L2 |
|    | OR                                                                                                                             |   |    |
| 18 | What is traffic rotary? What are its advantages and limitations, in particular reference to traffic conditions in India? [10M] | 4 | L2 |
| 19 | Explain the components and functions of flexible pavements. [10M]                                                              | 5 | L2 |
|    | OR                                                                                                                             |   |    |
| 20 | Write the design procedure of rigid pavements as per IRC. [10M]                                                                | 5 | L2 |