| U.S.N. | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|

# B.M.S. College of Engineering, Bengaluru-560019

**Autonomous Institute Affiliated to VTU**

## June 2025 Semester End Main Examinations

**Programme: B.E.** **Semester: V**

**Branch: Civil Engineering** **Duration: 3 hrs.**

**Course Code: 23CV5PETRF / 22CV5PETRF** **Max Marks: 100**

**Course: TRAFFIC ENGINEERING**

**Instructions**: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.



**Important Note:** Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.

| | | UNIT - I | CO | PO | Marks |
|---|---|---|---|---|---|
| 1 | a) | Explain total reaction time of driver and the factors on which it depends. Explain "PIEV" theory and the importance. | CO1 | PO1 | **12** |
| | b) | Discuss the urban traffic problem for Indian Scenario. | CO4 | PO1 | **08** |
| | | **OR** | | | |
| 2 | a) | A passenger car weighing 2 tonnes is required to accelerate at a rate of 3 m/sec² in the first gear from a speed of 10 K.P.H. The gradient is + 1 per cent and the road has a black topped surface. The frontal projection area of the car is 2.0 m². The car tyres have radius of 0.33 m. The rear axle gear ratio is 3.82: 1 and the first gear ratio is 2.78: 1. Calculate the engine horsepower needed and the speed of the engine. Make suitable assumptions. | CO1 | PO2 | **12** |
| | b) | Discuss about the sustainable approach to mitigate the urban problems in India. | CO1 | PO7 | **08** |
| | | **UNIT - II** | | | |
| 3 | a) | List the various Origin-Destination surveys. Discuss any three of them briefly. | CO2 | PO1 | **12** |
| | b) | Define PCU. Discuss the factors affecting PCU. | CO2 | PO1 | **08** |
| | | **OR** | | | |
| 4 | a) | Discuss the various levels of service and factors affecting the level of service. | CO2 | PO1 | **12** |
| | b) | Discuss the various methods for parking surveys usually conducted. | CO2 | PO1 | **08** |
| | | **UNIT - III** | | | |
| 5 | a) | Mention the principles to be considered in design of intersection. | CO3 | PO1 | **08** |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | b) | Discuss the types of coordinated signal system. | *CO3* | *PO1* | **12** |
| | | | **OR** | | | |
| | 6 | a) | Discuss the various types of Grade Separated Intersections based on legs and turnings. | *CO3* | *PO1* | **12** |
| | | b) | Discuss the merits and demerits of Rotary intersection. | *CO3* | *PO1* | **08** |
| | | | **UNIT - IV** | | | |
| | 7 | a) | Explain the causes and effects of road accidents. | *CO3* | *PO1* | **12** |
| | | b) | Discuss the measures to be taken to promote and integrate public transport. | *CO3* | *PO1* | **08** |
| | | | **OR** | | | |
| | 8 | a) | Discuss the causes and remedial measures on following:<br>i) Air pollution ii) Noise pollution | *CO4* | *PO1, 7* | **08** |
| | | b) | Enumerate the design considerations of separate cycle tracks and safety rules for pedestrian traffic. | *CO3* | *PO1* | **12** |
| | | | **UNIT - V** | | | |
| | 9 | a) | Discuss the importance of Travel Demand Management. | *CO4* | *PO1* | **08** |
| | | b) | Discuss the economic principles behind Road Pricing. | *CO4* | *PO1* | **12** |
| | | | **OR** | | | |
| | 10 | a) | Discuss Traffic System Management. | *CO4* | *PO1* | **08** |
| | | b) | Define Intelligent transport system and discuss the applications of ITS. | *CO4* | *PO1* | **12** |

**********