



P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belagavi)

Seventh Semester, B.E. - Civil Engineering

Semester End Examination; Jan. / Feb. - 2021

Traffic Engineering

Time: 3 hrs

Max. Marks: 100

Note: Answer *FIVE* full questions, selecting *ONE* full question from each unit.

UNIT - I

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|------|---|----|
| 1 a. | With a neat sketch explain the concept of PIEV theory. | 5 |
| | b. A vehicle moving at 40 kmph speed was stopped by applying the brake and the length of skid mark was 12.2 m. If the average skid resistance of the pavement is known to be 0.7, determine the braking efficiency of the test vehicle. | 5 |
| | c. List the different road user characteristics which affect the road design. Briefly explain. | 10 |
| 2 a. | Discuss major traffic problems in urban areas and suggest remedial measures. | 5 |
| | b. In a braking test, a vehicle travelling at a speed of 30 kmph was stopped by applying brakes fully and skid marks were 5.8 m in length. Determine the average skid resistance of the pavement surface. | 5 |
| | c. Explain various resistances to be considered for vehicle performance. | 10 |

UNIT - II

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|------|--|----|
| 3 a. | Define the following : | |
| | i) Spot speed | |
| | ii) Journey time | 5 |
| | iii) Running speed | |
| | iv) Space-mean speed | |
| | v) Time-mean speed | |
| | b. List the objectives of O-D studies and explain them in brief. | 5 |
| | c. Define parking accumulation and parking index. With a neat sketch, explain parking space inventory. | 10 |
| 4 a. | Define the following : | |
| | i) ADT | |
| | ii) AADT | 5 |
| | iii) Parking volume | |
| | iv) Parking turn-over | |
| | v) Desire line | |
| | b. With a neat sketch, explain Enoscope method for measuring spot speed. | 5 |
| | c. With a neat sketch, explain the level of service concept while deciding design capacity of a road. | 10 |

UNIT - III

- 5 a. List different types of Traffic signs. Discuss the importance of Traffic signs. 5
- b. Write a brief note on salient features of cycle track in urban areas. 5
- c. With a neat sketch, discuss various design elements of a rotary intersection. 10
- 6 a. List the advantages and disadvantages of traffic signals. 5
- b. Explain the importance of VMS in the urban traffic management. 5
- c. With neat sketches, explain the purposes of channelization. 10

UNIT - IV

- 7 a. Write a brief note on noise pollution in urban areas due to vehicular movement. 5
- b. Explain the significance of public transport in mitigating traffic congestion in urban areas. 5
- c. Briefly discuss the various causes for road accidents. 10
- 8 a. List the different types of air pollutants from automobile exhaust. Comment on air pollution form petrol and diesel engine vehicles. 5
- b. Explain the need for promotion of non-motorised transport in urban areas. 5
- c. Briefly discuss the role of three 'E's in mitigating road accidents in urban areas. 10

UNIT - V

- 9 a. Explain the role of 'ITS' in traffic management. 5
- b. List some common techniques adopted in travel demand management. 5
- c. List traffic regulatory measures and explain them in brief. 10
- 10 a. Explain the role of one way streets and exclusive bus lanes in traffic management. 10
- b. Briefly discuss the advantages and disadvantages for closing of side-streets. 10

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