CBCS SCHEME

USN ☐☐☐☐☐☐☐☐☐☐ 15CV561

Fifth Semester B.E. Degree Examination, July/August 2021
Traffic Engineering

Time: 3 hrs. Max. Marks: 80

Note: ***Answer any FIVE full questions.***

1 a. Define Traffic Engineering and explain its scope. **(08 Marks)**
b. What are the different Resistances to be considered in vehicle movement? Explain. **(08 Marks)**

2 a. Discuss the Road user characteristics in detail. **(08 Marks)**
b. A vehicle of mass 1800kg has to accelerate at 2m/sec^2 from a speed of 12kmph to 22kmph in the first gear. The gradient is +1.2% and the coefficient of rolling resistance is 0.025. The frontal area and coefficient of air resistance are 2.38m^2 and 0.37respectively. Determine the engine horse power required. **(08 Marks)**

3 a. List the objectives and uses of i) 'O' and 'D' studies ii) Parking studies. **(08 Marks)**
b. Discuss the various traffic studies and what are the objects of carrying out traffic volume studies. **(08 Marks)**

4 a. Mention the objectives of accident studies; also mention the various causes of accidents. **(08 Marks)**
b. A vehicle of weight 2.0 tonne skids through a distance equal to 40m before colliding with another parked vehicle of weight 1.0 tonne after equal to 12m before stopping. Compare the initial speed of the moving vehicle. Assume coefficient of friction as 0.5. **(08 Marks)**

5 a. Explain the following with examples :
i) Regulatory signs ii) Warming signs iii) Informatory signs. **(08 Marks)**
b. Explain at grade and grade separated inter section. **(08 Marks)**

6 a. Bring out the advantages and disadvantages of traffic signals. **(08 Marks)**
b. The average normal flow on cross roads 'A' and 'B' during design period are 400 and 250 PCU per hour. The saturation flows are 1250 and 1000 PCU per hour respectively. The all red time required for pedestrian crossing is 12 seconds. Design a two phase signal by Webster's method. **(08 Marks)**

7 a. Explain various design factors of road lighting. **(08 Marks)**
b. Discuss the effect of air pollutants. **(08 Marks)**

8 a. Explain the measures to control the traffic noise. **(08 Marks)**
b. Write a short notes on road safety audit. **(08 Marks)**

9 a. Explain : i) TSM ii) TDM. **(08 Marks)**
b. Mention the applications of ITS. **(08 Marks)**

10 a. Mention the basic principles of traffic regulation. **(08 Marks)**
b. Explain the factors determining skid resistance. **(08 Marks)**

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.