

Total Number of Pages : 01

B.Tech
PECI5410

8th Semester Back Examination 2018-19
TRAFFIC ENGINEERING AND TRANSPORTATION PLANNING

BRANCH : CIVIL

Time : 3 Hours

Max Marks : 70

Q.CODE : F040

Answer Question No.1 which is compulsory and any FIVE from the rest.
The figures in the right hand margin indicate marks.

Q1 Answer the following : (2 x 10)

- a) What is the value of the coefficient of rolling resistance for a road surfaced with cobblestone?
- b) How does the density of the air impact the motion of the vehicle?
- c) State the factors which govern the acceleration rate of a vehicle?
- d) What is the Doppler principle on which working of Radar speed meter is dependent?
- e) Distinguish between spot speed and running speed.
- f) Define parking accumulation and parking load.
- g) Determine the parking turn-over if there are 8 parking spaces used by 120 vehicles in a period of 12 hours.
- h) List out the growth factor methods of trip distribution.
- i) Write the traffic assignment techniques.
- j) Define travel time ratio and travel cost ratio which are related to modal split.

Q2 a) How does the air resist a vehicle in motion? How do you estimate the air resistance? (5)

- b) A Maruti car travelling at a speed of 70 K.M.P.H. on a level WBM road in bad condition (rolling resistance coefficient = 0.037) is suddenly allowed to coast by switching off engine and putting the gear in neutral. What is the deceleration caused? Note: for Maruti car coefficient of resistance is 0.40 kg/m², frontal area is 1.54 m², mass is 880 kg. (5)**

Q3 a) Explain any four sensors working on different principles used for traffic counts. (5)

- b) What are the uses of O-D survey? Explain the O-D matrix used for presentation of O-D survey data. (5)**

Q4 a) Justify the adoption of multi storey car parks. What are the standards followed for designing a multi storey car parks. (5)

- b) Illustrate (with diagrams) the traffic management by providing right turn and points of conflict. (5)**

Q5 a) Draw the typical layout showing dimensions of on street parking stalls for parallel parking, 30° angle parking, 60° angle parking and right angle parking. (5)

- b) Distinguish between flow – concentration curve and speed – concentration curve used to present traffic flow. (5)**

Q6 a) Discuss the factors those affect the highway capacity. (5)

- b) What is a rotary intersection? Describe various geometric elements of rotary with sketch. (5)**

Q7 Define trip distribution. Discuss synthetic methods of trip distribution. (10)

Q8 Write short answer on any TWO : (5 x 2)

- a) Enoscope
- b) Regulations for vehicle needed for traffic regulation
- c) Diversion curves