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Total number of printed pages – 2

B. Tech
PECI 5410

Eighth Semester Regular Examination – 2015
TRAFFIC ENGINEERING AND TRANSPORTATION PLANNING
BRANCH : CIVIL

QUESTION CODE : J 163

Full Marks – 70

Time : 3 Hours

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



1. Answer the following questions : 2 × 10
- (a) Explain the significance of PCU.
 - (b) State the relationship between time mean speed and space mean speed.
 - (c) What will be the grade resistance to a vehicle of mass 3000 kg on a rising grade of 4% ?
 - (d) What do you mean by basic capacity ?
 - (e) State the ill effects of parking.
 - (f) What are the methods of O-D survey ?
 - (g) State the fundamental principle of traffic management.
 - (h) State the factors affecting trip generation.
 - (i) What is the need of economic evaluation ?
 - (j) List out the factors affecting capacity and LOS.
2. (a) Discuss the physiological and psychological behavior of road users on traffic. 5
- (b) Discuss the various resistances to the motion of a vehicle including the power required to overcome the same. 5

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3. (a) What are the methods of spot speed measurements ? Describe any two methods in detail. 5
- (b) Discuss the important traffic management measures in a city to ensure safe and efficient movement of traffic. 5
4. (a) Describe the off-street parking facilities planned for a city. 5
- (b) With a neat sketch describe the various geometric elements of a rotary. 5
5. Assuming a linear speed-density relationship, the mean free speed is observed to be 50 kmph near zero density and corresponding jam density is 100 vehicles per km. Write the speed density and flow density equations. Compute speed and density for a flow of 1000 vehicles per hour. Find the maximum flow under the above conditions. Also draw the speed-density, flow-density and speed-flow diagrams showing all salient values. 10
6. (a) Discuss the various measures to regulate speed of traffic flow. 5
- (b) What are the methods of economic evaluation of transport plans ? Describe any two methods in detail. 5
7. (a) Explain systems approach to transport planning with a block diagram. 5
- (b) What are the growth factor methods of trip distributions ? Describe any one method in detail. What are the advantages of growth factor methods ? 5
8. (a) State the objectives of traffic assignment. What are the methods of traffic assignment ? Discuss any one method. 5
- (b) Describe the factors affecting modal split. Give a flow diagram of post-distribution modal split. 5