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Total No. of Questions : 5]

[Total No. of Printed Pages : 4

d) Write in detail about mass transportation in India. [www.rgpvonline.in](http://www.rgpvonline.in)

OR

What are three E's for prevention of road accidents?  
Explain in detail.

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Roll No .....

**CE-7102**

**B.E. VII Semester**

Examination, December 2016

**Traffic Engineering**

*Time : Three Hours*

*Maximum Marks : 70*

- Note:** i) Answer five questions. In each question part A, B, C is compulsory and D part has internal choice.  
ii) All parts of each question are to be attempted at one place.  
iii) All questions carry equal marks, out of which part A and B (Max.50 words) carry 2 marks, part C (Max.100 words) carry 3 marks, part D (Max.400 words) carry 7 marks.  
iv) Except numericals, Derivation, Design and Drawing etc.

### **UNIT - I**

- List various objectives of traffic engineering.
- What is meant by "Visual acuity" and "field of vision"?
- Explain PIEV theory and its significance.
- What is the significance of road user characteristics in traffic engineering. Discuss in detail various factors which affect the road user characteristics and their effects in traffic performance.

situation :

- i) A vehicle moving on a positive 3% grade at an initial speed of 50 kmph and final speed 20 kmph.
- ii) A vehicle moving on a level road at an initial speed 50 kmph final speed zero.
- iii) A vehicle moving on a 3% downhill grade at an initial speed 50 kmph and final speed 20 kmph.

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Also determine the stopping distance for (ii) case assume the co-efficient of rolling friction to be 0.5 and the perception reaction time 2.5 seconds.

### UNIT - II

2. a) Write a short note on 30<sup>th</sup> highest hourly volume and its significance.
- b) Describe various causes of delay in traffic movements.
- c) Discuss on street parking and off street parking.
- d) What is O and D studies? Explain various methods of origin and destination studies.

OR

Write detail note on :

- i) Level of service concept.
- ii) Spot speed studies.

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### UNIT - III

3. a) What are the various types of traffic markings commonly used?
- b) Explain various types of traffic sign and their functions.

street?

- d) Explain traffic rotary. What are its advantages and limitations? Discuss with relation to Indian road conditions.

OR

Explain the design steps in design of isolated fixed time traffic light signal as per IRC guide lines.

### UNIT - IV

4. a) What is the importance of highway street lighting?
- b) Discuss various light sources used for street lighting.
- c) Write short note on mounting height of street lighting.
- d) Calculate the spacing between the lighting units to produce a lux equal to 7.0 from the following data :

width of road = 14m.

mounting height = 8.0m.

lamp size = 7000 lumen

luminaire type II

OR

Write detail note on :

- i) Fundamental factors of night vision
- ii) Cut off system.

### UNIT - V

5. a) How record of road accidents important? Explain briefly.
- b) What are the causes of road accidents?
- c) Explain condition diagram and collision diagram.