

B.Tech III Year II Semester (R13) Regular Examinations May/June 2016

TRANSPORTATION ENGINEERING – I

(Civil Engineering)

Time: 3 hours

Max. Marks: 70

PART – A
(Compulsory Question)

- 1 Answer the following: (10 X 02 = 20 Marks)
- (a) How highways help in the economic development of a nation?
 - (b) Give the hierarchy of Roads in Rural and urban scenarios.
 - (c) What factors influence SSD and how they influence?
 - (d) What is the need for extra widening in a horizontal curve?
 - (e) What is the relationship between Flow and Density?
 - (f) Define 'Optimum Cycle Time' used in Signal Design by Webster method.
 - (g) Define "Channelization".
 - (h) What is the main concept of Rotary Intersection?
 - (i) What is the function of sub grade in a pavement structure?
 - (j) What is modulus of sub grade reaction?

PART – B
(Answer all five units, 5 X 10 = 50 Marks)**UNIT – I**

- 2 What are the salient features of Nagpur Road Development Plan?

OR

- 3 What are the factors affecting Highway alignment? Discuss about obligatory points.

UNIT – II

- 4 Define Overtaking Sight Distance. Explaining the process of overtaking on a two lane two way road and derive an expression for computing OSD.

OR

- 5 A National Highway is to be designed for a speed of 90 kmph. The highway is of two lanes and is passing through a level terrain. A horizontal curve of 325 m radius is proposed at a location and the super elevation is to be provided by rotating the pavement about the centre line. The rate of introduction of super elevation is 1 in 120. Compute the length of transition curve needed.

UNIT – III

- 6 What are the objectives of Traffic Volume studies? What are the methods of presentation of Volume Data?

OR

- 7 How a road user can be a cause of accident? Discuss.

UNIT – IV

- 8 How traffic can be controlled and regulated at intersection by traffic islands? Support your answer with neat diagrams.

OR

- 9 What are the various types of Grade Separated interchanges possible? Show their layouts and indicate traffic movements on them.

UNIT – V

- 10 Explain the differences between Flexible Pavements and rigid Pavements.

OR

- 11 What are the different types of stresses expected in rigid pavements and how they have to be taken care of in design? Discuss.
