PVP 12

Code: CE5T5

**III B.Tech - I Semester – Regular Examinations - November 2014**

# TRANSPORTATION ENGINEERING - I
## (CIVIL ENGINEERING)

Duration: 3 hours Marks: 5x14=70

Answer any FIVE questions. All questions carry equal marks

1. a) What are the significant recommendations of Jayakar Committee Report? Explain how these recommendations helped in road development in India? 7 M

   b) Explain various factors controlling the Highway alignment. 7 M

2. a) Derive an expression for calculating overtaking sight distance on a Highway. 7 M

   b) The radius of a horizontal curve is 400m, the total pavement width at curve is 7.6 m and the super elevation is 0.07m. Design the length of transition curve for a speed of 100 kmph. Assume pavement to be rotated about inner edge. 7 M

3. a) Indicate how the traffic volume data are presented and the results used in Traffic Engineering. 7 M

   b) Explain about road markings. 7 M

4. a) The average normal flow of traffic on a cross roads A and B during design period are 480 and 320 PCU per hour. The saturation flow values on these roads are estimated as 1300 and 1000 PCU per hour respectively. The all- red time required for pedestrian crossing is 12 sec. Design two phase traffic signal by Webster method. 7 M

b) Explain the various design factors that are to be considered in Rotary Intersection design. 7 M

5. a) What are the various tests carried out for bitumen to judge its suitability? Explain the softening point test procedure. 7 M

b) Explain briefly the Marshall method of bituminous concrete mix design. 7 M

6. a) Explain the procedure for obtaining the thickness of a flexible pavement based on CBR of subgrade as per the IRC practice. 7 M

b) Draw neat sketch of Flexible pavement cross section and describe the functions and importance of each component. 7 M

7. a) Explain about Westergaards concept for temperature stresses. 7 M

b) Briefly outline the IRC recommendations for determining the thickness of CC pavements. 7 M

8. Write short notes on the following

a) Overlay 5 M

b) Grade compensation 4 M

c) Bituminous surface dressing 5 M