

PART - B (5 × 16 = 80 Marks)

11. (a) Explain the Bombay road congress 1961.

OR

- (b) Explain in detail the reconnaissance survey for Highway location in rural area.

12. (a) What are the factors affecting Sight distance ?

OR

- (b) The design speed of a highway is 80 kmph. There is a horizontal curve of radius 200 m on this road. If maximum super elevation of 1 in 15 is not to be exceeded calculate the maximum allowable speed on the curve. Also determine the extra widening required and length of the spiral transition curve using the following data. Length of the wheel base=6.1 m, Pavement width = 7.2 m and number of lanes = 2. Rate of introduction of super elevation is 1 in 200.

13. (a) Design the pavement for construction of a new bypass with the following data:

1. Two lane carriage way
2. Initial traffic in the year of completion of construction = 400 CVPD (sum of both directions)
3. Traffic growth rate = 7.5 %
4. Design life = 15 years
5. Vehicle damage factor based on axle load survey = 2.5 standard axle per commercial vehicle
6. Design CBR of subgrade soil = 4%.

OR

- (b) Explain the Design of joints.

14. (a) What are the Desirable properties of aggregates ?

OR

- (b) Explain the Ductility test and Softening point test.

15. (a) Explain in detail the possible causes and remedial measures for joint failure.

OR

- (b) Explain the possible causes and remedial measures for joint spalling.