002505

Jan. 2022

B-Tech (Civil) Vth Semeseter

Transportation Engineering Concepts (PCC-CE-307R)

Time : 90 Minutes] [Max. Marks : 25

Instructions :

1. *It is compulsory to answer all the questions (1 mark each) of Part-A in short.*
2. *Answer any three questions from Part-B in detail.*
3. *Different sub-parts of a question are to be attempted adjacent to each other.*

PART - A

1. (a) Enlist various road patterns. (1)

   (b) Define super elevation. (1)

   (c) Define overtaking zone. (1)

   (d) What are the functions of shoulder? (1)

   (e) What is PIEV theory? (1)

   (f) Define intersection. (1)

   (g) Explain ESWL. (1)

(h) What are the desirable properties of soil as a highway material? (1)

(i) List the factors affecting design of flexible pavements. (1)

(j) List the conditions under which summit curve is used. (1)

PART - B

2. (a) Write salient features of first twenty year road development plan. (3)

(b) A valley curve is formed due to two gradients +3.5% and −2.75%. If the design speed of this highway is 80 kmph, determine the stopping sight distance and design the valley curve to fulfil both comfort and head light distance conditions. (2)

3. (a) Write down the various advantages and disadvantages of traffic signals. (2)

(b) What is the extra widening required (as nearest magnitude) for a pavement of 7 m width on a horizontal curve of radius 200 m, if the longest wheel of vehicle expected on the road is 6.5 m and the design speed is 65 km/h? (3)

4. What is the rigid pavement? What are the steps for design of CC pavements thickness as per IRC guidelines? (5)

5. (a) Define possible capacity and Basic capacity. (3)

(b) Differentiate between tack coat and prime coat. (2)

6. (a) Write short notes on sheet asphalt. (2)

(b) What do you understand by wrapping stresses & temperature stresses? (3)