B.E CONSTRUCTION ENGG 3rd YEAR FIRST SEMESTER EXAMINATION 2019

TRANSPORTATION ENGINEERING Ref No : Ex/CON/T/313/2019

Full Marks -100 Time -3 hours

Answer any five questions [Assume relevant data if required]

[CO6] Q-1. Determine the maximum permissible speed, super elevation and the length of the transition curve for a 3 degree curve on BG A route with a highest sectional speed of (110 + last digit of your roll number) kmph. Assume the equilibrium speed as 80 kmph and the booked speed of goods train is 60 kmph. [20]

[CO5] Q-2. (i) Explain negative super elevation. [5 X 4 = 20]

(ii) Draw a sectional diagram showing different components related to points and crossing in a railway yard.

(iii) Briefly discuss the factors which affect the choice of rail section.

(iv) Draw a sectional diagram of standard rail section presently in use in BG track.

[C04] Q-3. Define and explain the significance of Space mean speed and Time mean speed with respect to pavement management. [6]

(ii) Define AADT and describe its significance. [4]

(iii) Explain volume flow diagram in a four legged highway intersection. [4]

(iv) Explain in brief the concept of level of service in highway design . [6]

[CO1] Q-4. (i) Explain the major points in highway development plan 'vision 2020'. [5]

(ii) A falling gradient of 1in 20 meets a rising gradient of 1 in 40 on a MDR with a design speed of 80 kmph . Determine the length of the valley curve, which will be safe in night driving . [10]

(iii) Classify different types of roads in India with their specific objective. [5]

[CO3] Q-5. A two lane state highway with a design speed of 100 kmph with a radius of 300 m in a rolling terrain. Design all relevant geometric features of the proposed highway section to make it safe. [20]

[CO2] Q-6. Write notes on the following [5 X 4 = 20]

(I) Grade compensation (ii) Overtaking sight distance (iii) Kerb (iv) PIEV theory