REF- CON/PC/B/T/314(S)

B.E. Construction Engineering 3rd year 1st Semester Supplementary Examination 2024

TRANSPORTATION ENGINEERING Full Marks- 100

Time – 3 hours

Answer any four questions. Assume relevant data if required

Q-1(a) Explain the basic principle of Kanpur plan in our country. How can you estimate the length of NH.,SH and MDR in a state using Kanpur plan. (10)

(b) Discuss significance of running and journey speed in city traffic regulation. (5)

© Define Time mean speed and Space mean speed. (5)

(d) Explain PCU in traffic engineering . (5)

Q-2(a) Determine the length of a valley curve formed by a descending gradient 0f 1 in 20 meeting an ascending grade 1 in 25 . The curve has to be designed to fulfil both comfort condition and head light sight distance requirements. (13)

(b) Draw a neat sketch of the cross section of a National highway on embankment section and explain the different geometrical components in it. (12)

Q-3(a) A national highway with a design speed of 90 kmph has a horizontal curve passing through Kolkata with a radius of 330 meter . Determine the superelevation required , length of the transition curve and extra widening required. (15)

(b) Explain Reaction time. Determine the stopping sight distance and braking distance for a design speed of 60 kmph in Kolkata E.M.Bypass. (10)

Q-4 (a) Calculate the super elevation, maximum permissible speed for a 2 degree curve on a Kolkata-NJP Bande Bharat route, with a maximum sanctioned speed of 120 kmph. Assume the equilibrium speed as 80 kmph and the booked speed of goods train as 50 kmph. (18)

(b) Define sleeper density . Determine the number of sleepers required per km length of BG rail track if the sleeper density is (M+ 7) (7)

Q-5 Write notes on the following

(a) Unigauge policy in Indian railway
(b) (b) Ballast and sub ballast (c) Camber (d) Grade Compensation
(c) (e) classification of steel rail section (25)