CLASS: BE   SEMESTER : VI
BRANCH: CEE   SESSION : SP/19

SUBJECT: CE6003 TRANSPORTATION ENGG. II

TIME: 3hrs   FULL MARKS: 60

INSTRUCTIONS:
1. The question paper contains 7 questions each of 12 marks and total 84 marks.
2. Candidates may attempt any 5 questions maximum of 60 marks.
3. The missing data, if any, may be assumed suitably.
4. Before attempting the question paper, be sure that you have got the correct question paper.
5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.

Q.1(a)   Explain any two advantages of rail transport over road transport.   [2]
Q.1(b)   Write short notes on RITES and IRWO.   [4]
Q.1(c)   What are the basic requirements of a good alignment?   [6]

Q.2(a)   What is sleeper density and how it is calculated?   [2]
Q.2(b)   Differentiate between roaring rails and hogged rails. Explain any one method to eliminate each.   [4]
Q.2(c)   Define creep. Write any three factors which cause creep. How it is measured?   [6]

Q.3(a)   Give two reasons for limiting the cant deficiency.   [2]
Q.3(b)   Explain different types of transition curves and write the equation for the transition curve adopted by   [4]
         railways.
Q.3(c)   What is negative superelevation? From a layout of B.G.yard, a 8^0 curve branches off from a 4^0 main   [6]
         curve in an opposite direction. If the speed is restricted to 28.95 km.p.hr and permissible value of cant
         deficiency is 7.61 cm, determine the speed restriction on the main line.

Q.4(a)   Differentiate between junction station and terminal station.   [2]
Q.4(b)   Define number of crossing. Explain the three methods of calculating the number of crossing.   [4]
Q.4(c)   What are the design details in a diamond crossing? Design a diamond crossing which is formed by crossing   [6]
         two B.G.tracks at an angle of $5^0 42' 35"$ (permissible flattest angle for a diamond crossing).

Q.5(a)   Write two principles of interlocking.   [2]
Q.5(b)   Write short notes on warner signals and shunting signals.   [4]
Q.5(c)   Find out the steepest gradient on a straight track for a train having 20 wagons if Weight of each   [6]
         wagon=18 tonnes, Rolling resistance of wagon =2.5 kg/tone, Speed = 50km.p.hr.,Weight of locomotive
         = 120 tonnes, Tractive effort of locomotive = 15 tonnes and Rolling resistance of locomotive = 3.5
         kg/tonne.

Q.6(a)   Explain cross wind component and wind coverage.   [2]
Q.6(b)   Differentiate between loading apron and holding apron.   [4]
Q.6(c)   What are exit taxiways? What are the different types? Determine the turning radius of the taxiway for   [6]
         a supersonic aircraft with wheel base 30m and wheel tread 6m for a turning speed of 70 km.p.hr.

Q.7(a)   Differentiate between port and harbor.   [2]
Q.7(b)   Write two advantages and disadvantages of enclosed wet docks.   [4]
Q.7(c)   What is tetrapod? What are its characteristics?   [6]

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