[Total No. of Questions - 9] [Total No. of Printed Pages - 3]

MAY-25-0424

CE-602 (Transportation Engineering-II)

B.Tech-6th (CBCS)

Time : 3 Hours Max. Marks : 60

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

Note: Attempt five questions in all, select one question each from sectoin A,B,C and D. Question no. 9 is compulsory, which is of 20 marks.

Section - A

1. Explain the following: (10)

   a) Explain the term ballast less tracks and explain its advantages.

   b) Describe the functions and requirements of sleepers.

   c) What are the factors affecting the selection of gauges?

OR

2. (a) Enumerate the role of Indian Railways in National development. (05)

   (b) Discuss about the maintenance and renewal of rails, sleepers and track fittings. (05)

Section - B

3. If the ruling gradient is 1 in 150 on a particular section of Broad Gauge track and at the same time a curve of 4 degree is situated on this ruling gradient, what should be the allowable ruling gradient? (10)

OR

4. Write a note about (10)
   a) Momentum gradient and
   b) Compensated gradient for curvature.
   c) Station yard Gradient

Section - C

5. (a) What do you mean by Runway number and Runway configuration? Find the runway number when the bearing of an alignment is 120°. (05)
   (b) How is the runway orientation selected? State and explain the terms, Cross wind component and Wind coverage. (05)

OR

6. The following table provides taxi way dimensional standards [posed by the ICAO]. All measures are in meters. With reference to these data, suppose a runway with ICAO aerodrome code letter D will accommodate aircraft with wingspans up to 60 m. The minimum taxiway-to-taxiway separation is (10)

Aerodrome code letter	A	B	C	D	E
Edge safety margin	1.5	2.25	3	4.5	4.5
Minimum wingtip clearance	3	3	4.5	7.5	7.5

   a) S_{TT}= 73.5 m
   b) S_{TT}= 76.5 m
   c) S_{TT}= 79.5 m
   d) S_{TT}= 81.5 m

Section - D

7. Explain, in detail, the causes for Airfield Rigid pavement failures. (10)

OR

8. (a) What are the various design factors that are considered for the runway pavement? Explain all the factors. (05)

   (b) Discuss the aircraft parking systems in detail. (05)

(Compulsory Question)

9. Write briefly about the following:

   a) What is tilting of Rails?

   b) What is cant deficiency? Draw a neat sketch of the same.

   c) Differentiate between - Stud switch and Split switch.

   d) What are the different types of airports?

   e) Write a note about Surface drainages. (5×4=20)