

Total No. of Questions: 6

Total No. of Printed Pages: 2

Enrollment No.....



Faculty of Engineering  
End Sem Examination May-2023  
CE3CO22 Transportation Engineering -I

Programme: B.Tech.

Branch/Specialisation: CE

Duration: 3 Hrs.

Maximum Marks: 60

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d. Assume suitable data if necessary. Notations and symbols have their usual meaning.

- Q.1 i. Railway rails are made up of- **1**  
(a) Cast Iron (b) Mild Steel  
(c) High Carbon steel (d) Wrought Iron
- ii. No. of sleepers arranged in a per rail length called \_\_\_\_\_. **1**  
(a) Sleeper Density (b) Super-elevation  
(c) Guages (d) All of these
- iii. Which of the following is not a requirement of good ballast? **1**  
(a) Rounded (b) Cheap (c) Tough (d) Wear resistant
- iv. Why is Combination fish plates used? **1**  
(a) To connect rails of two different sections  
(b) To connect two different fastenings  
(c) To increase load  
(d) To connect two rails of similar sections
- v. At what angle should a railway line cross a road? **1**  
(a) 45° (b) 60° (c) 30° (d) 90°
- vi. Normally the limiting value of cant is (where G is the gauge)- **1**  
(a) G/8 (b) G/10 (c) G/12 (d) G/15
- vii. The application of \_\_\_\_\_ diagram is used to find the orientation of the runway to get the desired wind coverage. **1**  
(a) Wind butterfly (b) Wind cycle  
(c) Wind star (d) Wind rose
- viii. ICAO recommends basic runway length increased at a rate of \_\_\_\_\_ rise in elevation above m.s.l. **1**  
(a) 6% per 300m (b) 7% per 200m  
(c) 8% per 250m (d) 7% per 300m

P.T.O.

[2]

- ix. Elliptical shape tunnel is not suitable for- **1**  
(a) Sewer (b) Road way/Railway  
(c) Drainage (d) Gutter
- x. What is the method of tunneling in hard rock? **1**  
(a) Full face method (b) Heading and bench method  
(c) Drift method (d) All of these
- Q.2 i. What are railway alignments? **2**  
ii. Explain various components of railway. **3**  
iii. Define sleepers? Explain its characteristics, types & material used for sleepers. **5**
- OR iv. Explain ballast section. What are the characteristics of good ballast? **5**
- Q.3 i. Explain the term negative super elevation. **2**  
ii. Explain the importance of geometric designs of a railway track. Enumerate various features of the design of a railway track? **8**
- OR iii. Explain reason and remedies of stress in rails. **8**
- Q.4 i. Explain railway signals. **3**  
ii. What are the different requirements of a railway station? **7**
- OR iii. What is railway yard? Discuss various types of railway yards. **7**
- Q.5 i. Define airport? Write the requirements of a good airport. **4**  
ii. Give the detailed classification of airports. **6**
- OR iii. Explain in detail the lighting system on airport with diagram. **6**
- Q.6 Attempt any two:  
i. What is tunnel? Discuss the advantages and disadvantages of tunnels as a means of communication. **5**  
ii. Give the detailed classification of tunnels. **5**  
iii. Write a short note on ventilation and drainage of tunnel. **5**

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MCQ.

1.	I	c	VIII	d
	II	a	IX	b
	III	a	X	a
	IV	d		
	V	d		
	VI	b		
	VII	d		

2. I Explanation - 2

II 3 components - 1 for each

III Defi - 1, characteristics - 1, Types - 1, Materials used - 2

IV Defi - 2, characteristics - 3,

3. I Explanation - 2

II Explanation - 4, Features - 4

III Reasons - 4, Remedies - 4

4. I Explain - 3

II Requirements - 5 - 1.5 mark each

III Explanation of yard - 3, Types of yard - 4

5. I Definition - 2 requirements - 2

II Classification - 3, explanation - 3

III Lighting system - 3, explanation - 3

6. I Definition - 1 - Advantages - 2, Disadvantages - 2

II ~~Detail~~ Classification - 3, sub class - 2

III Ventilation -  $2\frac{1}{2}$ , Drainage -  $2\frac{1}{2}$

