A **Reg. No. :** | | | | | | | | | | | | |

Question Paper Code: U1501

B.E. / B.Tech DEGREE EXAMINATION, NOV 2024

Professional Elective

Civil Engineering

21CEV501 RAILWAY AIRPORT AND HARBOUR ENGINEERING

(Regulations 2021)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. For a Broad Gauge route with (M + 7) sleeper density, number of sleepers per rail length is CO1-U

(a) 18 (b) 19 (c) 20 (d) 21

2. When the rail ends rest on a joint sleeper, the joint is termed as CO1-U

(a) supported rail joint (b) suspended rail joint

(c) bridge joint (d) base joint

3. The height of the rail for 52 kg rail section is CO2-U

(a) 143 mm (b) 156 mm (c) 172 mm (d) 129mm

4. The formation width for a single line meter gauge track in embankment as adopted on Indian Railways is CO2-U

(a) 4.27 m (b) 4.88 m (c) 5.49 m (d) 6.10 m

5. The threshold markings are CO1-U

(a) 4 m wide and 45 m in length
(b) 1 m clear space between adjacent
(c) placed symmetrically on either side of the runway center line
(d) all the above.

6. Which of the following methods of designation of crossing is mostly used in India? CO1-U

(a) center line method (b) right angle method

(c) isosceles angle method (d) none of the above

7. The side slope of embankments for a railway track is generally taken as CO2-U

(a) 1:1 (b) 1.5:1 (c) 2:1 (d) 1:2

8. Number of switches provided on a Gaunt-letted track is CO2-U

(a) 1 (b) 2 (c) 3 (d) none of the above

9. The runway orientation is made so that landing and takeoff are CO2- U

(a) against the wind direction (b) along the wind direction

(c) perpendicular to wind direction (d) None of these

10. A ship is berthed in a chamber and lifted by principles of buoyancy Such a chamber is called CO1-U

(a) Dry dock (b) Wet dock (c) Floating dock (d) Refuge dock

PART – B (5 x 2= 10Marks)

11. Build some points on uses of Fish Plates. CO1-U

12. Give the classification of yards. CO3 - App

13. Differentiate embankment and cutting. CO3 -App

14. Differentiate between VFR and IFR. CO1-U

15. Distinguish between “tides” and “Waves”. CO2-U

PART – C (5 x 16= 80Marks)

16. (a) Suggest some type of gradients for the various locations for the laying of track. CO2 - U (16)

Or

(b) Suggest the various types of rail joints, Rail fittings and fastening used in a track. CO2 - U (16)

17. (a) Description of Track Junctions with sketches CO2 - U (16)

Or

(b) List the conventional and modern methods of maintenance of railway track. What are the different types of equipment used? CO2 - U (16)

18.	(a)	What are the basic patterns of runway configurations? Discuss each pattern.	CO1 - U	(16)
		Or		
	(b)	Description of Points / Switches with sketches	CO1 - U	(16)
19.	(a)	What are the basic patterns of runway configurations? Discuss each pattern.	CO1 - U	(16)
		Or		
	(b)	Classify different types of break water. Explain any Two suitable methods in brief.	CO2– U	(16)
20.	(a)	Discuss the tides and wave effects and its action on coastal structures	CO2 - U	(16)
		Or		
	(b)	Explain the classification of harbors.	CO2– U	(16)