Reg. No.										

Question Paper Code	11875

B.E. / B.Tech. - DEGREE EXAMINATIONS, APRIL / MAY 2023
Sixth Semester
Civil Engineering
20CEPC602 - RAILWAYS, AIRPORTS AND HARBOR ENGINEERING
(Regulations 2020)

Duration: 3 Hours   Max. Marks: 100

PART - A (10 × 2 = 20 Marks)
Answer ALL Questions

		Marks, K-Level, CO
1.	Define permanent way with neat sketch.	2,K2,CO1
2.	Discuss the types of spikes.	2,K2,CO1
3.	What are the different methods of plate laying?	2,K1,CO3
4.	Mention the advantages of track maintenance.	2,K1,CO3
5.	What is a hangar? Mention its types.	2,K1,CO4
6.	State the term ICAO and its function.	2,K1,CO4
7.	What is a wind rose diagram?	2,K1,CO5
8.	What is clear zone?	2,K1,CO5
9.	How is breakwater classified?	2,K1,CO6
10.	How is Inland Water Transport different from sea transport?	2,K1,CO6

PART - B (5 × 13 = 65 Marks)
Answer ALL Questions

11.	a)	Illustrate the various theories of creep in railways with suitable diagram.	13,K2,CO1
		OR	
	b)	What are the functions of sleepers? Write a short note on the types of sleepers with their merits and demerits.	13,K2,CO1
12.	a)	Explain various types of railway yard in detail.	13,K2,CO3
		OR	
	b)	Explain the different types of signals used in railway.	13,K2,CO3
13.	a)	Explain the salient features and functions of aprons in an airport.	13,K2,CO4
		OR	
	b)	Illustrate the points to be considered for the site selection of airports.	13,K2,CO4

K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create   **11875**

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14. a) The length of runway under standard conditions is 1620m. The airport site has an elevation of 270m. Its reference temperature is 32.90°C. If the runway is to be constructed with an effective gradient of 0.20%. Determine the corrected runway length. *13,K3,CO5*

OR

b) Develop Type I and Type II wind rose diagrams. Explain how the optimum runway orientation is determined. *13,K2,CO5*

15. a) Summarize the purpose and types of Docks with suitable sketch. *13,K2,CO6*

OR

b) Define CRZ and explain the formulation of CRZ in detail. *13,K2,CO6*

PART - C (1 × 15 = 15 Marks)

16. a) (i) Explain the factors which control the alignment of a railway track. *8,K2,CO2*

(ii) A 5° curve diverges from a 3° main curve in reverse direction in the layout of a B.G. yard. If the speed on the branch line is restricted to 35 kmph, determine the restricted speed on the main line. *7,K3,CO2*

OR

b) (i) Explain: Negative super-elevation and Cant deficiency. *7,K2,CO2*

(ii) Discuss the factors to be considered in selection of gauge. *8,K2,CO2*