Reg. No.												

Question Paper Code	12668

B.E. / B.Tech. - DEGREE EXAMINATIONS, APRIL / MAY 2024

Sixth Semester

Civil Engineering

20CEPC602 - RAILWAYS, AIRPORT 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	K1	CO1
2.	What are the functions of sleepers?	2	K1	CO1
3.	List the classification of yards.	2	K1	CO3
4.	Outline on surface drainage.	2	K2	CO3
5.	State the term ICAO and its function.	2	K1	CO4
6.	List the criteria for site selection of airport.	2	K1	CO4
7.	What is meant by wind coverage?	2	K1	CO5
8.	What is clear zone?	2	K1	CO5
9.	List any two erosion protection Methods in Coastal Zone.	2	K1	CO6
10.	How is Inland Water Transport different from sea transport?	2	K2	CO6

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

			Marks	K – Level	CO
11.	a)	Illustrate the various theories of creep in railways with suitable diagram.	13	K2	CO1
		OR			
	b)	Explain the various rail fixtures and fastenings in permanent way with neat sketch.	13	K2	CO1
12.	a)	Explain in detail about plate laying techniques.	13	K2	CO3
		OR			
	b)	Explain the different types of signals used in railway.	13	K2	CO3
13.	a)	Illustrate the necessity, functions and types of hangers.	13	K2	CO4
		OR			
	b)	Explain the salient features and functions of aprons in an airport.	13	K2	CO4

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

14.	a) i)	Identify the different elements of airport lighting.	*5*	*K2*	*CO5*
	ii)	The length of runway under standard conditions is 1620m. The airport site has an elevation of 270m. Its reference temperature is 32.90^0C. If the runway is to be constructed with an effective gradient of 0.20%. Determine the corrected runway length.	*8*	*K3*	*CO5*
		OR			
	b) i)	Identify the items to be considered in the geometric design of runway.	*5*	*K2*	*CO5*
	ii)	The runway length required for landing at sea level in standard atmospheric condition is 3000m. Runway length required for take- off at a level site at sea level in standard atmospheric condition is 2500m. Aerodrome reference temperature is 25^0C & that of standard atmosphere at aerodrome elevation of 150m is 14.025^0C. If the effective gradient is 0.5%, determine the runway length to be Provided.	*8*	*K3*	*CO5*
15.	a)	Classify the different types of break waters with neat sketches in detail.	*13*	*K2*	*CO6*
		OR			
	b)	Explain the various costal protection works in detail.	*13*	*K2*	*CO6*

PART - C (1 × 15 = 15 Marks)

16.	a)	Explain the conventional and modern methods of surveying for route alignment of railway tracks.	*15*	*K2*	*CO2*
		OR			
	b)	Describe the various types of level crossings with neat sketches.	*15*	*K2*	*CO2*