



Galgotias College of Engineering and Technology, Greater Noida

Pre University Test (PUT) : Odd Semester 2024 -25

Roll No. :

Course/Branch : B.Tech/CE

Subject Name : Railway, Waterway & Airport Engg.

Subject Code : KCE070

Semester : 7th

Max. Marks : 100

Time : 180 min

CO-1 : Explain the importance of railway infrastructure.

CO-2 : Identify the factors governing design of railway infrastructures.

CO-3 : Analysis and design the railway track system.

CO-4 : Understand the concepts of airport engineering and design components of airport.

CO-5 : Associate with the concepts of water transport system.

Section – A # 20 Marks (Short Answer Type Questions)

Attempt ALL the questions. Each Question is of 2 marks (10 x 2 = 20 marks)

Q No.	COx	Question Description # Attempt ALL the questions. Each Question is of 2 marks
1	a	CO1 What is function of spikes in railway ? (K1)
	b	CO1 Define formation in track. (K1)
	c	CO2 Describe the gradient in railway. (K2)
	d	CO2 Explain the safe permissible speed. (K2)
	e	CO3 Explain the shunting signal used in railway. (K2)
	f	CO3 Explain the term ATS in railway. (K2)
	g	CO4 Explain the zoning law. (K2)
	h	CO4 Explain the hanger in airport. (K2)
	i	CO5 Describe the shipping planes. (K2)
	j	CO5 Explain the inland water operation. (K2)

Section – B # 30 Marks (Long / Medium Answer Type Questions)

Attempt ALL the questions. Each Question is of 6 marks (5 x 6 = 30 marks)

Q 2 (CO-1) : Explain the material specification used in railway tracks. (K2)

OR

Using a sleeper density of $N+5$, calculate the number of sleepers required for constructing a railway track (B.G) 1200 m long. (K3)

Q 3 (CO-2) : If the ruling gradient is 1 in 160 on a section of broad gauge and at the same time a curve of 4 degree is situated on this ruling gradient, determine the allowing ruling gradient. (K5)

OR

A 8° curve diverges from a 4° main curve in the reverse direction in the layout of a broad-gauge yard. If the speed on the branch line is restricted to 38 km/h, Determine the restricted speed on the main line. (K5)

Q 4 (CO-3) : Discuss the principle of absolute break system. (K2)

OR

Describe the signal classification in station yard. (K2)

Q 5 (CO-4) : Explain with neat sketch how marking is done on a runway (K2)

OR

Explain briefly the various factor considered in selection of site for airport (K2)

Q 6 (CO-5) Determine the role of storm wind in harbour layout (K5)

OR

Discuss the various navigational aids in harbour engineering. (K2)

Section – C # 50 Marks (Medium / Long Answer Type Questions)

Attempt ALL the questions. Each Question is of 10 marks.

Q 7 (CO-1) : Attempt any ONE question. Each question is of 10 marks.

- Discuss the points & crossings? Draw a neat sketch of right-hand turnout. (K2,K4)
- Discuss the typical cross-section of permanent way. Discuss in brief its various basic function (K2)

Q 8 (CO-2) : Attempt any ONE question. Each question is of 10 marks.

- Describe the various fitting and fixtures used in permanent ways. (K2)
- State the difference between station and yards. Write the names of different types of station & yards. (K2)

Q 9 (CO-3) : Attempt any ONE question. Each question is of 10 marks.

- Explain the principle and function of interlockings. (K2)
- Discussed about linear motion and tracked air cushion vehicle. (K2)

Q 10 (CO-4) : Attempt any ONE question. Each question is of 10 marks.

- Write are various factor effecting to airport capacity (K2)
- Define various parameter used in airport drainage management. (K2)

Q 11 (CO-5) : Attempt any ONE question. Each question is of 10 marks.

- Discuss various types of harbour with sketch. (K2)
- Discuss about sounding. explain the method for taking sounding on a ship (K2)