GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER–VII (NEW) EXAMINATION – SUMMER 2022

Subject Code:3170619   **Date:10/06/2022**

Subject Name:Railway and Airport Engineering

Time:02:30 PM TO 05:00 PM   **Total Marks: 70**

Instructions:
1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**
4. **Simple and non-programmable scientific calculators are allowed.**

			MARKS
Q.1	(a)	Enlist the different gauges used in India.	03
	(b)	Write short note on coning of wheel.	04
	(c)	What is Ballast? Write Function and requirement of good ballast	07
Q.2	(a)	Draw typical Layout of Airport Terminal Building.	03
	(b)	Find out the expression for sleeper density for B.G track if 19 sleepers are used under a rail length.	04
	(c)	Explain in detail wind rose diagram showing direction, duration and intensity of wind by drawing sketch.	07
		OR	
	(c)	Describe airport master planning process as per ICAO recommendations.	07
Q.3	(a)	Enlist various types of spikes and explain any one in brief.	03
	(b)	Write short note on 'super elevation' or 'cant'.	04
	(c)	$5°$curve diverges from a main curve of $4°$ in an opposite direction in the layout of a broad-gauge yard. If the speed on the main curve is restricted to 54.33 kmph, determine the speed restriction on the branch line. Assume permissible cant deficiency as 7.5 cm.	07
		OR	
Q.3	(a)	Draw a sketch of turnout and explain its components.	03
	(b)	Explain causes of rail accidents and their remedial measures.	04
	(c)	Explain briefly requirement of an airport drainage system.	07
Q.4	(a)	Write a note on Instrument Landing System.	03
	(b)	Describe in brief the basic requirements of good alignment.	04
	(c)	Explain in detail advantages and disadvantages of air transport	07
		OR	
Q.4	(a)	Write a note on site selection for Hangers.	03
	(b)	What are functions of director general of civil aviation.	04
	(c)	Explain briefly requirement of an airport drainage system.	07
Q.5	(a)	Draw sketch showing parts of Aeroplane.	03
	(b)	Describe various aircraft parking systems with figures	04
	(c)	An Airport is proposed at an elevation of 410 m above mean sea level where the mean of maximum and mean of average daily temperatures of the hottest month are 45°C and 26°C respectively. The maximum elevation difference along the proposed profile of	07

runway is 6.5 m. If the basic length of runway is 1270 m, determine the actual length of runway to be provided

OR

Q.5 **(a)** Determine turning radius of taxiway if the speed of aircraft is 93km/hour and co efficient of friction is 0.13. **03**

(b) Explain the Nose hangers and T hangers with neat sketch. **04**

(c) Write a short note on runway lighting and visual aids. **07**

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