

# GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-IV EXAMINATION – SUMMER 2025

Subject Code:3140103

Date:12-05-2025

Subject Name:Aircraft Systems, Instruments and Maintenance

Time:10:30 AM TO 01:00 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
<b>Q.1</b>	(a) Compare hydraulic system and pneumatic systems in aircrafts.	<b>03</b>
	(b) Explain the turbojet engine with neat sketch.	<b>04</b>
	(c) Explain the principle of hydraulic system with neat sketch.	<b>07</b>
<b>Q.2</b>	(a) What are the main functions of the oil in the oil systems?	<b>03</b>
	(b) Classify the landing gear systems.	<b>04</b>
	(c) Write a note on thrust vectoring and thrust reversing.	<b>07</b>
	<b>OR</b>	
	(c) Illustrate seat ejection method.	<b>07</b>
<b>Q.3</b>	(a) What are the features of a modern autopilot system?	<b>03</b>
	(b) Explain in your ways, the requirements of instruments for safe operation of flight.	<b>04</b>
	(c) Explain in detail the cabin pressurization system.	<b>07</b>
	<b>OR</b>	
<b>Q.3</b>	(a) Explain the fly by wire system in brief.	<b>03</b>
	(b) Draw and explain fuel system of a conventional jet transport aircrafts.	<b>04</b>
	(c) Give the constructional features and working of vertical speed indicator.	<b>07</b>
<b>Q.4</b>	(a) Compare IC engines and Aircraft Gas turbine engines.	<b>03</b>
	(b) Shortly explain aircraft rigging.	<b>04</b>
	(c) Explain in detail the pitot instruments.	<b>07</b>
	<b>OR</b>	
<b>Q.4</b>	(a) Explain the rigidity and precision in brief.	<b>03</b>
	(b) What are the pressure measuring instruments? Explain any one of them.	<b>04</b>
	(c) Explain applications of horizontally opposed 4 cylinders, 4 stroke engines.	<b>07</b>
<b>Q.5</b>	(a) What are the functions of tachometer?	<b>03</b>
	(b) Explain fuel flow indicator.	<b>04</b>
	(c) With block diagram explain hydraulic control system of elevator.	<b>07</b>
	<b>OR</b>	
<b>Q.5</b>	(a) Enlist the engine data measuring instruments.	<b>03</b>
	(b) Explain function of auxiliary power unit.	<b>04</b>
	(c) Draw and explain deicing and anti-icing system of jet transport aircraft.	<b>07</b>

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