

GUJARAT TECHNOLOGICAL UNIVERSITY

BE- SEMESTER-IV (NEW) EXAMINATION – WINTER 2024

Subject Code:3140103

Date:21-11-2024

Subject Name: Aircraft Systems, Instruments and Maintenance

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) What do you mean by aircraft system?	03
(b) Differentiate between breakdown and schedule maintenance.	04
(c) Draw a schematic design of turbojet engine and explain each component.	07
Q.2 (a) What is thrust reversal?	03
(b) What is the purpose of thrust augmentation?	04
(c) Elaborate dry sump lubrication system.	07
OR	
(c) Elaborate wet sump lubrication system.	07
Q.3 (a) What is lubrication function in gas turbine jet engine?	03
(b) Explain pitot static system with neat sketch	04
(c) What is pressurization? How crew cabin and passenger compartment are pressurized?	07
OR	
Q.3 (a) What is function of oxygen system?	03
(b) With neat sketch explain fuel supply system of low wing aircraft.	04
(c) What is pump feed system? Explain with neat sketch.	07
Q.4 (a) Explain about Hydraulic actuator.	03
(b) What is De-icing and Anti-icing?	04
(c) Explain Water-Methanol Thrust Augmentation System with neat sketch.	07
OR	
Q.4 (a) What happens if pitot is fixed behind propeller disk?	03
(b) Differentiate between cable and pushrod control mechanism of aircraft.	04
(c) Explain the system which provides pressurized air supply to cockpit and passenger cabin.	07
Q.5 (a) Describe tachometer operation.	03
(b) What is Mach meter? How does it works?	04
(c) Explain four stroke reciprocating engine.	07
OR	
Q.5 (a) Explain variable pitch propeller control?	03
(b) Explain turn and slip indicator with neat sketch.	04
(c) Explain two stroke reciprocating engine.	07
