

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-IV(NEW) EXAMINATION – WINTER 2022****Subject Code:3140103****Date:14-12-2022****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) Explain function of Bell Crank, Control Horns, and servo arms with neat sketch.	<b>03</b>
	(b) Explain turn and slip indicator with neat sketch.	<b>04</b>
	(c) What is pump feed system? Explain with neat sketch.	<b>07</b>
<b>Q.2</b>	(a) Explain blockage error in air speed indicator.	<b>03</b>
	(b) Differentiate between 2 stroke and 4 stroke engine.	<b>04</b>
	(c) Explain aircraft hydraulic system, requirement and components.	<b>07</b>
	<b>OR</b>	
	(c) Explain aircraft pneumatic system, requirement and components.	<b>07</b>
<b>Q.3</b>	(a) Define aircraft maintenance.	<b>03</b>
	(b) What is airline and structural maintenance?	<b>04</b>
	(c) What is pressurization? How crew cabin and passenger compartment are pressurized?	<b>07</b>
	<b>OR</b>	
<b>Q.3</b>	(a) What is thrust reversal?	<b>03</b>
	(b) What is light and heavy maintenance?	<b>04</b>
	(c) With neat sketch explain vertical speed indicator.	<b>07</b>
<b>Q.4</b>	(a) What is thrust vectoring?	<b>03</b>
	(b) What is the purpose of thrust augmentation?	<b>04</b>
	(c) Elaborate dry sump lubrication system.	<b>07</b>
	<b>OR</b>	
<b>Q.4</b>	(a) What is need of electrical system in aircraft?	<b>03</b>
	(b) Explain air cycle system.	<b>04</b>
	(c) Elaborate wet sump lubrication system.	<b>07</b>
<b>Q.5</b>	(a) Explain function of hydraulic pump.	<b>03</b>
	(b) Differentiate between cable and pushrod control mechanism of aircraft.	<b>04</b>
	(c) Explain different types of landing gear.	<b>07</b>
	<b>OR</b>	
<b>Q.5</b>	(a) Describe tachometer operation.	<b>03</b>
	(b) Classify and shortly explain four types of gas turbine engines.	<b>04</b>
	(c) Explain seat ejection system.	<b>07</b>

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