

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

Subject Code:3140103**Date:27-06-2022****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 |
|---|-----------|
| Q.1 (a) Explain aircraft rigging. | 03 |
| (b) Draw vertical speed indicator with neat nomenclature. | 04 |
| (c) Enumerate hydraulic system. | 07 |
| Q.2 (a) What is lubrication function in gas turbine jet engine? | 03 |
| (b) What is De-icing and Anti-icing? | 04 |
| (c) What is pressurization? Explain cabin pressurization system. | 07 |
| OR | |
| (c) Explain function of gas turbine jet engine with neat sketch. | 07 |
| Q.3 (a) Describe push-pull control rod system. | 03 |
| (b) Differentiate between breakdown and schedule maintenance. | 04 |
| (c) Enlist explain applications of instruments for operation of gas turbine engines. | 07 |
| OR | |
| Q.3 (a) What is function of oxygen system? | 03 |
| (b) Define tachometer. | 04 |
| (c) Explain dry sump lubrication system. | 07 |
| Q.4 (a) What happens if pitot is fixed behind propeller disk? Explain with reference to air speed indicator reading. | 03 |
| (b) Elaborate reservoir, filters, shut-off valves and selector valve for aircraft system. | 04 |
| (c) Explain after burner Thrust Augmentation System with neat sketch. | 07 |
| OR | |
| Q.4 (a) What is thrust reversal? | 03 |
| (b) Describe types of maintenance schedule. | 04 |
| (c) Explain Water-Methanol Thrust Augmentation System with neat sketch. | 07 |
| Q.5 (a) What is thrust vectoring? | 03 |
| (b) Why mach meter is used in aircraft? | 04 |
| (c) Explain two stroke reciprocating engine. | 07 |
| OR | |
| Q.5 (a) What directional gyro indicator? | 03 |
| (b) Elaborate about seat ejection system. | 04 |
| (c) Explain four stroke reciprocating engine. | 07 |
