

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-IV (NEW) EXAMINATION – WINTER 2018

Subject Code:2140103

Date:10/12/2018

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. Use drawing instruments for sketches.

	MARKS
Q.1 (a) Only draw a pitot static system of a conventional civil aircraft with nomenclature.	03
(b) Explain Flaps position indicator system.	04
(c) Explain function of Attitude indicator with neat sketch. Discuss errors of HSI.	07
Q.2 (a) Only draw a mechanism of a conventional control column with nomenclature.	03
(b) What are the difference between Airbrakes and Spoilers?	04
(c) Differentiate between Single and dual control system with neat sketch.	07
OR	
(c) Explain function of Variable Pitch Control Unit equipped with governor.	07
Q.3 (a) Only draw different types of bushes used for cable control system and thrust bearing used in engine with nomenclature.	03
(b) Draw network of cable and pulleys for operation of primary control system in light aircraft.	04
(c) Draw assembly of push rod and explain principle of operation.	07
OR	
Q.3 (a) Only draw knuckle joint with nomenclature. Explain application of Knuckle joint in aircraft control surface rigging.	03
(b) Differentiate between cable control system and push-pull rod control system.	04
(c) Discuss various types of control horns used for operation of control surfaces.	07
Q.4 (a) Only classify aircraft piston engines with respect to location of cylinders, number of cylinders and numbers of strokes.	03
(b) Explain types of thrust augmentation systems with neat sketch.	04
(c) Explain function of horizontally opposed 4 cylinders, 4 stroke engines.	07

OR

- Q.4** (a) Only classify aircraft jet engines with respect to constructional features and applications. **03**
- (b) Explain types of thrust reversal systems with neat sketch. **04**
- (c) With neat sketch explain function of aviation turbojet engine. **07**
- Q.5** (a) Explain function of hydraulic pump. **03**
- (b) Shortly explain cabin pressurization system. **04**
- (c) With block diagram explain hydraulic control system of elevator. **07**
- OR**
- Q.5** (a) Explain function of bleed air valve. **03**
- (b) Explain applications of engine oil circulating systems. **04**
- (c) With neat sketch explain fuel system of high wing aircraft equipped with two fuel tanks in wings. **07**
