

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VII • EXAMINATION – WINTER • 2017****Subject Code: 170101****Date: 18-11-2017****Subject Name: Aircraft Design-I****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.

- Q-1 A Classify types of aircrafts. Shortly explain any six types. 07
 B What type of plan form shapes of wings are used in aircrafts? Explain with neat sketch. 07
- Q-2 A How will you determine fuel weight required for mission? 07
 B Explain type of tailplane configurations with neat sketch. 07
 OR
 B How will you decide type of engine for particular design? 07
- Q-3 A Explain flight envelop and phases of flight. 07
 B How will you determine thrust to weight ratio for jet transport aircraft? 07
 OR
 A How will you decide under carriage configuration? Explain with neat sketch. 07
 B How will you determine power to weight ratio for jet transport aircraft? 07
- Q-4 A Explain retraction geometry of main undercarriage with neat sketch. 07
 B How will you choose type of airfoil for particular wing? 07
 OR
 A How will you determine maximum take off weight of aircraft? 07
 B How will you estimate L/D ratio of aircraft design? 07
- Q-5 A How will you choose wing sweep? Explain with neat sketch. 07
 B Explain three stages of aircraft design. 07
 OR
 A Differentiate between fixed engine sizing and variable engine sizing. 07
 B Discuss location of engine mounting in aircraft.
