

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-IV (OLD) - EXAMINATION – SUMMER 2017

Subject Code: 140104

Date: 12/06/2017

Subject Name: Fundamentals Of Aeronautics

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) With neat sketch explain nomenclature of aerofoil. Also state different types of airfoils used on different categories of aircraft. **07**
- (b) Define Mach number and angle of attack. Also explain flow mechanism associated with Stalling. **07**
- Q.2** (a) Explain standard atmosphere in brief. **07**
- (b) Explain Critical mach number and Critical pressure coefficient. **07**
- OR**
- (b) Derive equation for thrust required for level flight. Describe in brief. **07**
- Q.3** (a) Classify aircraft parts and components with an aircraft figure. **07**
- (b) Define load factor, Limit load factor for classification of aircraft and Ultimate load factor. **07**
- OR**
- Q.3** (a) Show the comparison of C_L - α curve for symmetric and cambered airfoil. **07**
- (b) Derive an equation to obtain C_L from C_p . **07**
- Q.4** (a) Explain Gliding Flight. **07**
- (b) With neat sketch explain reciprocating engine with their types and applications. **07**
- OR**
- Q.4** (a) Explain Climbing Flight. **07**
- (b) Explain rocket engine and derive rocket equation. **07**
- Q.5** (a) Write a note on Ramjet engine with a neat sketch. **07**
- (b) Explain Fuselage structure in brief and types of fuselages. **07**
- OR**
- Q.5** (a) Explain wing and tail structure in brief. What is mono spar, two spar and multi spar? **07**
- (b) Enlist types of jet engine and explain Turbojet engine with a neat sketch. **07**
