

Enrolment No.\_\_\_\_\_

## BE – SEMESTER – VIII • EXAMINATION – WINTER - 2017

**Date: 07-11-2017**

**Total Marks: 70****Total Marks: 70**

**3. Figures to the right indicate full marks.**

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|-----|---|--|----|
| Q-1 | A | Draw a circle to square adaptor joining a circular cross section of 10 cm and 10 cm X 10 cm.                                 | 07 |
|     | B | Design a cockpit for a single pilot fighter plane.   | 07 |
| Q-2 | A | Prepare wing layout of a wing carrying 100000 pounds of weight with speed of 0.8 Mach. Take suitable aspect and taper ratio. | 07 |
|     | B | Shortly explain Preliminary design and detailed design.  | 07 |
|     |   | OR   |    |
|     | B | Shortly explain aircraft configurations with neat sketches.  | 07 |
| Q-3 | A | Differentiate between fixed and rubber engine sizing.  | 07 |
|     | B | With neat sketch explain how circle to square adaptors are used to model fuselage cross sections.                            | 07 |
|     |   | OR   |    |
|     | A | How will you verify either all formers are properly modeled or not?  | 07 |
|     | B | Shortly explain aircraft layout procedure with example and neat sketches.  | 07 |
| Q-4 | A | Explain structural consideration of a conventional semimonocoque fuselage.   | 07 |
|     | B | How will you design a fuselage carrying 80 passengers on board?  | 07 |
|     |   | OR   |    |
|     | A | Which considerations will you take to design hydraulics of aircrafts?  | 07 |
|     | B | Discuss consideration to locate guns and hard points on airframes.   | 07 |
| Q-5 | A | With neat sketch explain design of oleo type shock absorber of aircraft under carriage.                                      | 07 |
|     | B | Explain possible retraction geometry of main under carriage.   | 07 |
|     |   | OR   |    |
|     | A | Discuss various jet VTOL configurations.   | 07 |
|     | B | Discuss various Prop VTOL configurations.  | 07 |

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