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## **GUJARAT TECHNOLOGICAL UNIVERSITY**

**BE - SEMESTER-IV • EXAMINATION - WINTER • 2014** 

|     | •               | Code: 140103 Date: 05-01-2015   |          |
|-----|-----------------|---|----------|
| Tir | ne: 0<br>ructio |   |          |
|     | 2.              | Attempt all questions.  Make suitable assumptions wherever necessary.  Figures to the right indicate full marks.  |          |
| Q.1 | (a)<br>(b)      | Briefly explain characteristics - properties of aviation fuel and its sources.  Draw sketch of gas turbine engine showing different sections with operation.  Write requirement of accessories (gear) box | 07<br>07 |
| Q.2 | (a)             | Enlist Gas turbine engine instruments and explain capacitance type total fuel quantity indicator with figure.   | 07       |
|     | <b>(b)</b>      | Describe different types of turbine engine compressors and their function.  OR  | 07       |
|     | <b>(b)</b>      | Explain Air conditioning system of any transport aircraft.  | 07       |
| Q.3 | (a)<br>(b)      | Explain gravity feed fuel system of a light aircraft.  Enlist hydraulic system components. Explain operation and usage of Gear pump of hydraulic system with perfect figure.                              | 07<br>07 |
| Q.3 | (a)<br>(b)      | Explain in brief Types (sources) of hydrolytes. Explain operation of oil lubricating system of jet turbine engine. What is open loop and close loop system?   | 07<br>07 |
| Q.4 | (a)             | Explain operating principle of Air speed indicator with figure showing connections. Define true air speed.  | 07       |
|     | <b>(b)</b>      | Describe DME operation, purpose and principle with required sketch.  OR   | 07       |
| Q.4 | (a)<br>(b)      | Write function of Altimeter with operating sketch and connection.  Describe different gyro power sources and explain them.  | 07<br>07 |
| Q.5 | (a)<br>(b)      | Explain flight management system.  Explain configuration and types of landing gears with figure.  | 07<br>07 |
| Q.5 | (a)<br>(b)      | OR Explain gyroscopic heading indicator and its axis of rotation with figure. What are primary and secondary controls used on transport aircraft? Explain with figure.                                    | 07<br>07 |

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