

**B.TECH. (AEROSPACE ENGINEERING)  
(BTAE)**

**Term-End Examination**

**December, 2012**

**BAS-011 : AIRCRAFT SYSTEMS AND  
AIRWORTHINESS REQUIREMENTS**

*Time : 3 hours*

*Maximum Marks : 70*

**Note :** Answer *any seven* questions.

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|----|-----|--------------------------------------------------------------------------------------------------------------------------------------------------|---|
| 1. | (a) | Describe with the help of a diagram, the functioning of a Fuel Pump type fuel system in an aircraft.                                             | 6 |
|    | (b) | What are the types and colour codes of Aviation fuel ?                                                                                           | 4 |
| 2. | (a) | What is the difference between a single - acting and a double - acting servo in aircraft hydraulic systems ? Explain with the help of a diagram. | 6 |
|    | (b) | What are the possible causes of fuel contamination ?                                                                                             | 4 |
| 3. | (a) | What are the types of lubrication systems used in aircraft engines ? Explain any one of them in brief.                                           | 6 |

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|----|-----|------------------------------------------------------------------------------------------------------------------------------|---|
|    | (b) | What is the difference between anti - icing and de - icing systems as used in aircraft ?                                     | 4 |
| 4. | (a) | What are the characteristics of aviation oxygen ? How is it stored in an aircraft ?                                          | 4 |
|    | (b) | Explain with a diagram, the functioning of a constant flow aircraft oxygen system.                                           | 6 |
| 5. | (a) | Explain with the help of a diagram, the functioning of an ionization type smoke detector.                                    | 6 |
|    | (b) | Name the various fire extinguishing agents used in aircraft.                                                                 | 4 |
| 6. | (a) | Explain the principle of operation of an Evaporative Air cycle air conditioning system.                                      | 4 |
|    | (b) | Describe with a diagram, the functioning of an aircraft cabin pressurisation system.                                         | 6 |
| 7. | (a) | What is the nationality marking for aircraft registered in India ? What are the categories of aircraft for issue of C of A ? | 4 |
|    | (b) | What is the validity period of a Certificate of Airworthiness ? What are the conditions for its continued validity ?         | 6 |

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|----|-----|------------------------------------------------------------------------------------------|---|
| 8. | (a) | What is MEL ? What are the categories of MEL ?                                           | 4 |
|    | (b) | Define Flight time. Why is it important from the point of view of maintenance planning ? | 6 |
| 9. | (a) | What are the main parts of a turbine that require lubrication and cooling ?              | 4 |
|    | (b) | Explain the method by which fuel control is achieved in turbine engines.                 | 6 |
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