| BAS-011 |

B.Tech. AEROSPACE ENGINEERING (BTAE)

Term-End Examination

ロロ408   June, 2016

BAS-011 : AIRCRAFT SYSTEMS AND AIRWORTHINESS REQUIREMENTS

Time : 3 hours   *Maximum Marks : 70*

Note : *Answer any* ***seven*** *questions. All questions carry equal marks.*

1. (a) Describe with the help of a diagram, the functioning of a gravity feed fuel system in an aircraft.   *6*

    (b) What is the function of a fuel primer in an aircraft fuel system ?   *4*

2. (a) What are the functions of an aircraft engine oil system ? Explain the functioning of a wet sump oil system in reciprocating engine ?   *6*

    (b) What are the essential components of an aircraft hydraulic system ?   *4*

3. (a) What are the different kinds of oxygen
        systems in an aircraft ?   4

    (b) Explain with a diagram the functioning of a
        pressure demand oxygen system.   6

4. (a) Explain with a diagram the functioning of
        an aircraft pneumatic system for a turbofan
        engine.   6

    (b) What are the precautions to be kept in mind
        while carrying out servicing of oxygen
        systems ?   4

5. (a) Draw a basic overview of an aircraft
        electrical network.   4

    (b) What are the types of on-board monitoring
        equipment of aircraft electrical systems ?
        What is the function of load meter ?   6

6. (a) Why is pressurisation important in
        an aircraft ? What is differential pressure
        and how is it monitored ?   4

    (b) Describe the maintenance procedures used
        for air-conditioning systems in an aircraft. 6

7. (a) What are the pre-requisites for an aircraft
        to be issued Type Certificate by the DGCA ? 4

    (b) Define Airworthiness. What is certificate of
        airworthiness (C of A) ? What are the
        conditions under which a C of A ceases to be
        valid ?   6

8. (a) What information must be recorded in an aircraft technical log system ? *4*

(b) What are the aircraft maintenance guidelines specified by CAR ? *6*

9. (a) What kind of smoke detection system is used for cargo bay of an aircraft ? *4*

(b) Explain the functioning of an optical fire detection system. *6*