

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

Term-End Examination

00838

December, 2014

**BAS-018 : AIRCRAFT SAFETY AND MAINTENANCE
ENGINEERING**

Time : 3 hours

Maximum Marks : 70

Note : Answer any *seven* questions.

1. (a) What is condition based maintenance ?
What are the different types of condition monitoring ? What are “on-line” and “off-line” condition monitoring ? 5
- (b) What is towing of an aircraft ? Explain. 5
2. Describe the four steps of Statistical Process Control (SPC) in aircraft health monitoring. 10
3. Explain the starting procedure of an aircraft jet engine. 10
4. (a) How does cracking and corrosion occur on aircraft components ? 5
- (b) What are the air safety instructions to avoid the condition of overloading of aircraft ? 5

5. (a) Explain in detail the maintenance of aircraft. 5
- (b) What is the purpose of a maintenance check-list ?
6. (a) What are the Circular Aprons ? 5
- (b) What are the responsibilities laid out in air safety circulars for ensuring correct refuelling ? What are the aircraft operator's and fuel vendor's responsibilities in this regard ? 5
7. (a) Why is environmental cleanliness required in aviation ? How is it maintained ? 4
- (b) Briefly describe an Airworthiness directive. Also describe the different types of publications used in aircraft maintenance as per the CAR. 6
8. Assume that a system is composed of five independent and identical subsystems in series. The constant failure rate of each subsystem is 0.0025 failures per hour. Calculate the reliability and mean time to failure for 50 hrs. of mission. 10
9. Derive and compare the reliability of system in series and parallel for constant rate of failure. 10