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BAS-018

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B.TECH. (AEROSPACE ENGINEERING) (BTAE)

Term-End Examination

December, 2013

BAS-018 : AIRCRAFT SAFETY AND MAINTENANCE ENGINEERING

Time : 3 hours *Maximum Marks : 70*

Note : *(i) Attempt **any seven** (7) questions.*

*(ii) All questions carry **equal** marks.*

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1. Discuss the significance of **any two** of the following factors on maintainability of aircraft equipments. **5+5**

(a) Standardization
(b) Interchangeability
(c) Modularization
(d) Accessability.

2. What is condition based maintenance? What are different types of condition monitoring? **10**

3. (a) What are the various levels of aircraft maintenance? **4+6**

(b) What do you understand by the following in the context of spare part provisioning?
(i) Line replaceable unit
(ii) Shop replaceable unit.

4. What is life cycle costing concept and what are its benefits ? **10**

5. Write in brief about the following check procedures in aircraft maintenance : 2x5=10
   (a) Transit check
   (b) Ramp check
   (c) Service check
   (d) Inter check
   (e) Major service.

6. (a) A Maintenance Technician is performing a Task at continuous time. Derive an expression to check his reliability if the rate of errors made by the Maintenance Technician is assumed to be constant. 5
   (b) An aircraft Maintenance Technician is performing Time Continuous Task at 0.008 errors per hour. Calculate his reliability during a 7 hour mission. 5

7. What are the different types of aircraft safety circulars ? Explain any five of them. 10

8. Write short notes on : 5+5
   (a) ICAO
   (b) Dispatch reliability.

9. Briefly explain the inventory management for spare parts in aircraft maintenance industry. 10

10. (a) What is accelerated life testing ? 5
    (b) Prove that Mean Time To Failure (MTTF) for two independent and redundant components each having constant failure rate λ will be $\frac{3}{2T}$? 5