

B.E. DEGREE EXAMINATIONS: NOV/DEC 2010

Seventh Semester

AERONAUTICAL ENGINEERING

U07ARE07: Airframe Maintenance & Repair

Time: Three Hours

Maximum Marks: 100

Answer ALL Questions:-

PART A (10 x 1 = 10 Marks)

1. The metal identification method for magnesium alloy is _____
A. spark test B. flame test C. chemical test D. weight test
2. In ultrasonic inspection method, the flaws are identified by _____
A. electric current B. magnetic power C. wave signals D. radiation
3. The formation of a net work of fine cracks in the surface of the material is called _____
A. crazing B. solvents C. sand blacking D. heat gun
4. The bonding material of fibrous composite is _____
A. alloys B. metals C. matrix D. FRP
5. The alignment of aircraft parts or sections to obtain proper flight characteristics is called _____
A. rigging B. repair C. assembly D. jacking
6. In helicopter, the tail rotor thrust is controlled by _____
A. rigging guard B. anti-torque pedal C. flaps D. nozzle
7. Vegetable fluids are usually mixtures containing _____
A. castor oil B. alcohol and petroleum
C. castor oil and petroleum D. castor oil and alcohol
8. Prevent the formation of ice on the airplane is _____
A. de-icing system B. anti icing system
C. visual detection system D. ice detection system
9. The first logical step in trouble shooting is, about _____
A. engines B. hydraulic systems C. pneumatic starter system D. controls
10. In diamond coding system, the color of health hazard diamond is _____
A. blue B. red C. yellow D. white

PART B (10 x 2 = 20 Marks)

11. State the types of welding used in aircraft structural components.
12. Define feathering.
13. Enumerate the methods used for NDT testing.
14. How are plastics classified?
15. What is meant by symmetry check?
16. What is autoclave?
17. What is the purpose of APU?
18. What are types of pumps used in hydraulic systems?
19. Enumerate the hazardous materials used in storage and handling.

20. Define trouble shooting.

PART C (5 x 14 = 70 Marks)

21. (a) Explain in detail the various types of electrical resistance welding carried out in aircraft industry. **(OR)**

(b) Describe the various methods of NDT testing carried out on aircraft components

22. (a) Discuss about the maintenance and repair of plastic components. **(OR)**

(b) Discuss the special precautions taken while carrying out inspection and repair of composite components.

23. (a) Explain the procedure of Aircraft jacking. Listing out all the precautions besides, care and maintenance of jacking equipments. **(OR)**

(b) (i) Explain the rigging of airframe and aircraft controls (7)

(ii) Explain the methods used in tracking and balancing the main rotor blades of helicopter. (7)

24. (a) Describe the maintenance required on air-conditioning and pressurization system of an aircraft.

(OR)

(b) Write short notes on.

(i). Ice protection system (7)

(ii).Auxiliary power unit (7)

25. (a) Describe in brief about the three categories of hazardous materials in aircraft maintenance.

(OR)

(b) Give the detailed description about type of defects in airframe systems, its probable causes and the remedial actions.
