

- Q.25 Write the differences between Interply and Intraply Hybrid.
- Q.26 How is detection of corrosion done?
- Q.27 What are the means of mean by Electroplating?
- Q.28 Explain the curing method of composite materials.
- Q.29 Describe welding defects.
- Q.30 What are the different types of foams and their uses?
- Q.31 Describe autoclave process.
- Q.32 Give an example of aircraft part where composite can be used. What are the structural limitations associated?
- Q.33 Explain the methods to prevent corrosion.
- Q.34 Describe the process of composite making in brief.
- Q.35 Describe various types of threads.

#### **SECTION-D**

**Note:** Long answer type questions. Attempt any two questions out of three questions. (2x10=20)

- Q.36 Explain in detail the various metals joining process used in aircraft construction. Discuss their respective applications.
- Q.37 Write a detailed explanation cause of corrosion of aircraft parts and their solutions.
- Q.38 What are the various materials used in an aircraft specify the reasons thereof? Describe high temperature materials also.

No. of Printed Pages : 4

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187751/147751

**5th Sem / Branch : AME**  
**Subject:- Aircraft Material and Material Science-II**

Time : 3Hrs.

M.M. : 100

#### **SECTION-A**

**Note:** Multiple choice questions. All questions are compulsory (10x1=10)

- Q.1 What is a composite material?  
 a) Single isotropic material  
 b) Mixture of two or more similar materials  
 c) One type of material bonded with another material  
 d) None of the above
- Q.2 What is warp and Weft?  
 a) Defects in composite material  
 b) Directions of the threads in the matrix  
 c) Twisting and breaking of components  
 d) None of the above
- Q.3 Which of the following materials is used in making aircraft windows?  
 a) Thick glass                      b) Plexiglass  
 c) Graphite                        d) Plane glass
- Q.4 The bolt which has a circular ring of rectangular cross-section as its head, which can be conveniently held to prevent its rotation is \_\_\_\_\_  
 a) Hook bolt                        b) Eye-bolt  
 c) T-headed bolt                    d) Stud bolt

- Q.5** The standard threads have?
- a) British standards      b) American standards
  - c) Indian standards      d) All of the above
- Q.6** Which of the following property can be enhanced by reinforcing an aluminum alloy?
- a) density      b) Torsion resistance
  - c) Wear resistance      d) Strength
- Q.7** Which of the following is/are true regarding stress rupture?
- a) The stress required to cause a rupture in a predetermined time at a constant temperature
  - b) It is important in short-term high-temperature applications
  - c) Stress rupture is an important mechanical property for gas turbine or rocket engines
  - d) The stress required to cause a rupture in short-term high-temperature applications at a predetermined time is known as stress rupture and it is an important mechanical property for gas turbines and rocket engines.
- Q.8** What is the purpose Alclad?
- a) Prevent corrosion
  - b) Increase ductility
  - c) Increase surface toughness
  - d) Hardening
- Q.9** Which of the following is the correct size range of dispersoids (in micrometers) in dispersion strengthened composites?
- a) 0.0001-0.0009      b) 0.01-0.1
  - c) 0.1-1.0      d) 2.0-2.7

(2)

187751/147751

- Q.10** What is NDT?
- a) Testing without deviation
  - b) No defect technique
  - c) Testing of material without destroying
  - d) None of the above

### **SECTION-B**

**Note:** Objective type questions. All questions are compulsory. (10x1=10)

- Q.11** What do you mean by reinforcement?
- Q.12** Name two matrix materials used in composites.
- Q.13** What is the main fastening components in aircrafts?
- Q.14** Name two special paints.
- Q.15** What is the material used for making springs?
- Q.16** What material is heat sensors use?
- Q.17** Where is spring primarily used in Aircraft structure?
- Q.18** What is the advantage of honeycomb structure?
- Q.19** What is the role of locking devices in aircraft?
- Q.20** Name two high temperature materials used in aircrafts.

### **SECTION-C**

**Note:** Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

- Q.21** What are the different composite materials used in aircrafts?
- Q.22** What are the various characteristics of spring materials?
- Q.23** Explain the process of welding aluminum alloys.
- Q.24** What are the demerits of composite materials?

(3)

187751/147751