

- 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.

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**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?
- Single isotropic material
  - Mixture of two or more similar materials
  - One type of material bonded with another material
  - None of the above
- Q.2 What is warp and Weft?
- Defects in composite material
  - Directions of the threads in the matrix
  - Twisting and breaking of components
  - None of the above
- Q.3 Which of the following materials is used in making aircraft windows?
- Thick glass
  - Plexiglass
  - Graphite
  - 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 \_\_\_\_\_
- Hook bolt
  - Eye-bolt
  - T-headed bolt
  - 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

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- 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?

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