

- Q.24 What are machining cured composites?
 Q.25 What are chemical films? Where are they used?
 Q.26 How is heat sensing done?
 Q.27 What is the need for high temperature materials?
 Q.28 Describe the various defects found in welding.
 Q.29 Write a brief note on Heat Resistive Paints.
 Q.30 Describe the method used to detect defect in composite material?
 Q.31 What are the different types of Reinforcing Fibres?
 Q.32 What are the factors considered for manufacturing cost of composite?
 Q.33 How is heat sensing done?
 Q.34 Write a note on various NDT methods.
 Q.35 What are the benefits of honeycomb structure?

SECTION-D

- Note :** Long Answer type question. Attempt any two questions. $(2 \times 10 = 20)$
 Q.36 Explain the detection ways of deterioration in nonmetallic materials. How can it be worked upon?
 Q.37 Explain the process of curing composite materials with the help of a diagram.
 Q.38 Write in detail about the various standards of nuts and bolts used along with their applications.

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

Time : 3 Hrs. **M.M. : 100**

SECTION-A

Note : Multiple choice questions. All questions are compulsory. $(10 \times 1 = 10)$

- Q.1 What is the name of the nut which is a cap nut with spherical dome at the top?
 a) Dome nut b) Wing nut
 c) Flanged nut d) Cap nut
 Q.2 Leakage of inflammable gas from a corroded pipe can cause _____
 a) Acidity b) Alkalinity
 c) Turbidity d) Fire hazards
 Q.3 Which of the following can be used as wing covering in an aircraft?
 a) Manganese alloy b) Carbon
 c) Titanium d) Aluminium alloy
 Q.4 Metals does not exist in nature in the form of _____
 a) Nitrates b) Sulphates
 c) Carbonates d) Oxides
 Q.5 Which of the following may alter the mechanical properties of reinforced composites?
 a) Constituent properties
 b) Fiber length

- c) Fiber orientation
d) All of the mentioned
- Q.6** Metals does not exist in nature in the form of

 a) Nitrates b) Sulphates
 c) Carbonates d) Oxides
- Q.7** Which bolt is commonly used in bearing for shafts?
 a) Hook bolt b) Eye-bolt
 c) T-headed bolt d) Square-headed bolt
- Q.8** Select the incorrect statement from the following option
 a) Replacement of corroded equipment is time consuming
 b) Corrosion causes contamination of product.
 c) Corrosion increases the electrical conductivity of metals
 d) Corrosion causes leakage of toxic liquid or gases.
- Q.9** Which of the following is/are correct regarding creep?
 a) It is the continuous plastic elongation of metal under constant load.
 b) It is the high-temperature mechanical effect of a metal.
 c) It is the continuous plastic elongation of metal under constant load at high temperature and it can be minimized by the fraction of grain boundaries.
- d) It can be minimized by reducing the fraction of grain boundaries.
- Q.10** Which of the following is not a laminar composite?
 a) Bimetallic b) Cladding
 c) Paints d) Wood
- SECTION-B**
- Note:** Objective type questions. All questions are compulsory. (10x1=10)
- Q.11** Where is PVC used in aircraft structure.
Q.12 What is filament winding?
Q.13 What is thermoset?
Q.14 Mention two different types of threading of nuts.
Q.15 How do you define “Weaves”?
Q.16 What is an epoxy resin?
Q.17 Mention an example of defect in composite materials.
Q.18 Which aircraft components requires welding?
Q.19 Where is abrasive resistant paint used?
Q.20 What do you mean by fnroc weaves?
- SECTION-C**
- Note:** Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)
- Q.21** Write a short note on Titanium Alloys.
Q.22 What is honey comb structure? Where are they primarily used?
Q.23 What are the safety precautions to be taken while using composite materials.