Q.23 Explain the various aircraft hardware used in aircrafts.

Q.24 Describe the characteristics of spring material.

Q.25 Write the factors for selection of various aircraft materials?

Q.26 How is detection of corrosion done?

Q.27 What do you mean by Electroplating? How is it done?

Q.28 Explain Indian and British standards of threads.

Q.29 Explain the characteristics of spring materials

Q.30 Discuss the various high temperature material

Q.31 What are the uses of nuts and bolts?

Q.32 Give an example of aircraft part where composite can be used. Describe the reason for the same.

Q.33 What are the applications of steels in aircrafts?

Q.34 Explain the corrosion prevention methods.

Q.35 Explain the different kinds of defects in welding.

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 and the defects in the welding. What are the methods to

Q.37 Write a detailed explanation on the identification of Aircraft Hardwares and selection of materials.

Q.38 What are the various high temperature materials used in an aircraft? Explain the merits and demerits of each of them.

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Roll No. .....

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 Which of the following is a primary advantage of composite materials?

a) High cost

b) Low strength-to-weight ratio

c) Limited design flexibility

d) Corrosion resistance

Q.2 Which of the following is a common matrix material used in composite manufacturing with thermosetting properties

a) PVC b) Epoxy resin

c) Polyethylene d) Nylon

Q.3 What is one of the primary safety precautions when working with composite materials?

a) Avoiding exposure to ultraviolet light

b) Wearing appropriate personal protective equipment

c) Using high-speed machining techniques

d) Storing materials in humid environments

Q.4 What is the primary purpose of locking devices in aircraft hardware?
a) To increase weight
b) To prevent loosening due to vibrations
c) To enhance aerodynamics
d) To provide color coding for easy identification

Q.5 Which term refers to the type of threading commonly used in aircraft nuts and bolts?
a) Unified National Fine (UNF)
b) British Standard Whitworth (BSW)
c) Metric
d) Both a and b

Q.6 What is corrosion?
a) The process of metal hardening
b) The removal of metal ions from a surface
c) The degradation of materials due to chemical reactions with the environment
d) The deposition of metal onto a surface

Q.7 What is one method of corrosion detection used in aircraft maintenance?
a) Visual inspection
b) Listening for unusual sounds during flight
c) Smelling for unusual odors in the cabin
d) Checking the weight of the aircraft

Q.8 What is the purpose of electroplating in corrosion prevention?
a) To increase the weight of aircraft components
b) To enhance the aesthetic appearance of aircraft surfaces
c) To apply a protective layer of metal onto a substrate
d) To reduce the electrical conductivity of aircraft materials

Q.9 Which type of sensor is commonly used for heat sensing in high temperature environments?
a) Thermocouple b) Photodiode
c) Capacitive sensor d) Hall effect sensor

Q.10 How do high temperature materials contribute to safety in industrial settings?
a) By reducing the risk of chemical spills
b) By preventing electrical hazards
c) By withstanding extreme temperatures without failure
d) By improving ergonomic design

SECTION-B

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

Q.11 What is a composite material?
Q.12 What are the reinforcements?
Q.13 What types of rivets are used for aircrafts?
Q.14 What is Alclad?
Q.15 Which material is used in combustion chamber?
Q.16 Where are methods to weld aircraft Aluminum alloys?
Q.17 What are various welding defects?
Q.18 What are the advantages of using composite material?
Q.19 What is abrasive resistant paint?
Q.20 What is the material used for springs?

SECTION-C

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

Q.21 What are the advantages of composite materials over conventional materials?
Q.22 What are the various reinforcing fibers?