Q.28 What are the benefits of using composites in aircraft?

Q.29 What is tautening and non-tautening?

Q.30 Give two examples of each: Nature made composites, polymer composites and ceramic composites.

Q.31 Define carburizing and its purpose.

Q.32 Which material is chosen for turbine blades and why?

Q.33 Describe heat treatments applicable to Aluminium.

Q.34 What are the various grain defects in wood?

Q.35 What are the applications of wrought Aluminium?

SECTION-D

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

Q.36 Explain in detail the heat treatment process for light alloys?

Q.37 Describe the specifications of main aluminium alloys? Why Alclad is used?

Q.38 How is the identification of nonferrous metals done by practical tests? What is the effect of constituents on alloy steels?

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4th Sem / Aircraft Maintenance
Subject:- Aircraft Materials and Material Science - I

Time : 3Hrs. M.M. : 100

SECTION-A

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

Q.1 Which of the following can be used to make seats in an aircraft?

a) Magnesium alloy sheets
b) Graphite
c) Rubber
d) Pure magnesium

Q.2 What is the purpose of annealing?

a) To surface harden
b) To relieve internal stress
c) To increase toughness
d) To finish surface

Q.3 Pitting of the surface is a kind of aluminium alloy _____

a) corrosion
b) annealing
c) strength
d) manufacturing method

Q.4 The tendency of a material to fracture without changing it's shape is known as_____

a) brittleness b) hardness

c) elasticity d) carburizing

Q.5 Which is more prone to corrosion.

a) Aluminium b) Mild steel

c) Cast iron d) Stainless steel

Q.6 Which heat treatment method is also called as "drawing"?

a) Tempering b) Case hardening

c) Annealing d) Normalizing

Q.7 Which of the following is not an aircraft wood?

a) Spruce b) Mahogany

c) Birch d) Teak

Q.8 Which of the following is not used in aircraft?

a) Neoprene b) EPDM

c) Silicon d) Natural rubber

Q.9 Which of the following materials is used in making aircraft windows?

a) Thick glass b) Plexiglass

c) Graphite d) Plane glass

Q.10 Dope is a type of ?

a) Plastic b) Plasticised lacquer

c) Resin d) wax

SECTION-B

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

Q.11 What does the cross section of a wood log indicate?

Q.12 What is the benefit of plywood?

Q.13 Name the important aircraft glues?

Q.14 What is the property of thermoset?

Q.15 Where are Monel alloys used?

Q.16 What is Butyl?

Q.17 Name important ferrous materials?

Q.18 What is the purpose of Aircraft Adhesives?

Q.19 What do you mean by quenching?

Q.20 What is the use of Plywood in aircraft?

SECTION-C

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

Q.21 What is difference between natural and synthetic rubber?

Q.22 For airplane parts wood has been in use?

Q.23 At which part of the aircraft maximum stress occurs?

Q.24 How the service life is predicted?

Q.25 What is meant by a stabilizer and B stabilizer in alloying Titanium?

Q.26 What are critical point in iron carbon diagram?

Q.27 How is plywood made?