Q.32 Write in brief about Aircraft Adhesives and where are they used.

Q.33 Describe heat treatment of aircraft rivets.

Q.34 What are the various special materials used and where?

Q.35 What are the benefits of using composites in aircraft?

Section-D

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

Q.36 What are various metals used in aircraft construction? Explain in detail the heat treatment process for light alloys?

Q.37 What are the properties of Duralumin, Alclad and its uses?

Q.38 Describe various composites, adhesives ans sealants and their use.

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Sem. 4 Branch : Aircraft Maintenance
Subject : Aircraft Materials & Material Science-I

Time : 3 Hrs. M.M. : 100

SECTION-A

Note: Multiple type Questions. All Questions are compulsory. (10x1=10)

Q.1 Which type of glue is commonly used in aircraft construction due to its high strength and resistance to temperature changes?

a) Elmer's glue b) Epoxy
c) Super glue d) Rubber cement

Q.2 What is the purpose of dopes in aircraft fabric covering?

a) To add color
b) To increase weight
c) To seal & protect the fabric
d) To reduce flexibility

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 knows as _____.

a) Brittleness b) Hardness
c) Elasticity d) Carburizing

Q.5 Which type of plastic become soft and pliable when heated and hardens when cooled, allowing, it to be reshaped multiple times?

a) Resin plastic b) Thermoplastic
c) Thermosetting plastic d) Acrylic

Q.6 What is one common application of cellulose-base plastics in aircraft manufacturing?

a) Interior upholstery b) Exterior paint
c) Exterior wiring d) Landing gear

Q.7 The melting point of aluminium is _____.

a) 236^0C b) 1085^0C
c) 660^0C d) 1510^0C

Q.8 Which of the following property of a material is preferred in the construction of an aircraft?

a) Ductility b) Elasticity
c) Hardness d) High density

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 Which type of rubber is derived from natural sources such as latex from rubber trees?

a) Synthetic rubber b) Butyl rubber
c) Neoprene rubber d) Natural rubber

Section-B

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

Q.11 What is spuce?

Q.12 Why plywood is created?

Q.13 What is the purpose of using sealants?

Q.14 Where edging is done?

Q.15 Where are acrylics used?

Q.16 What is the property of a thermoset?

Q.17 What is service life?

Q.18 What is the purpose of Aircraft Adhesives?

Q.19 What is SAE system?

Q.20 What is the use of tempering and hardening?

Section-C

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

Q.21 Describe the grain defects in woods.

Q.22 How is plywood is made?

Q.23 What are the properties of thermo plastics?

Q.24 What are the respective uses of various types of rubbers?

Q25 Describe the properties and use of cast iron.

Q.26 What is meant by a stabilizer and b stabilizer in allowing Titanium?

Q.27 How normalizing treatment is done?

Q.28 What are the identification tests of ferrous metals?

Q.29 Explain polymer composites and ceramic composites.

Q.30 Define: Brittleness, Elasticiticity and Malleability.

Q.31 What is the use of magnesium and its alloys?