

- Q.23 What is plywood and its use?
- Q.24 What are the oxides used to manufacture refractory materials?
- Q.25 State the methods used for heat treatment of steel.
- Q.26 What are the various types of dopes and their use?
- Q.27 Explain the specifications of fabric used in aircraft construction.
- Q.28 Describe the difference between Iron and Steel.
- Q.29 What are the different types of plastics?
- Q.30 Explain tempering process.
- Q.31 State the application of sandwich structures in aerospace.
- Q.32 What are the applications of Titanium sponge?
- Q.33 What is use of varnish and enamels in aircraft construction?
- Q.34 What is the use of natural and synthetic rubber in aircrafts?
- Q.35 Describe shelf life of a product.

SECTION-D

- Note:** Long answer type questions. Attempt any two questions out of three questions. (2x10=20)
- Q.36 Describe the various metals and alloys used in aircrafts and standards if any in brief?
- Q.37 Why Aluminum is widely used? What are its alloys and their respective use?
- Q.38 Discuss the use of all non-metallic material in aircrafts.

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4th Sem / Branch : 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 is a common defect found in wood used for aircraft construction ?
a) Smooth surface b) Uniform grain pattern
c) Knots and voids d) Even coloration
- Q.2 Which type of the glue is commonly used in aircraft construction due to its high strength and resistance to temperature changes.
a) Elmer 'glue' b) Epoxy
c) Super glue d) Rubber cement
- Q.3 Which type of plastic becomes 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.4 Which type of plastic hardens irreversibly when heated, forming a rigid structure that cannot be reshaped?
a) Resin plastic
b) Thermosplastic
c) Thermosetting plastic
d) Acrylic
- Q.5 What is one common application of cellulose-based plastics in aircraft manufacturing?
a) Interior upholstery b) Exterior paint
c) Electrical wiring d) Landing gear
- Q.6 Which type of adhesive is commonly used in aircraft construction for bonding metal, composite , and other materials due to its high strength and resistance to temperature extremes ?
a) Epoxy b) Silicone
c) Cyanoacrylate d) Polyurethane
- Q.7 Which type of steel has the highest carbon content
a) Low carbon steel b) Medium carbon steel
c) High carbon steel d) Stainless steels
- Q.8 Which alloy is commonly used in aircraft manufacturing due to its lightweight and high strength-to-weight ratio?
a) Brass b) Magnesium alloy
c) Lead alloy d) Zinc alloy

- Q.9 What are the wheels of a landing great made of?
a) Typical rubber b) Sensitive rubber
c) Titanium alloy d) Thick rubber
- Q.10 What is the primary advantages of Duralumin-Alclad in aircraft construction?
a) High electrical conductivity
b) Resistance to corrosion
c) Low melting point
d) Ease of fabrication

SECTION-B

Note: Objective type questions. All questions are compulsory. $(10 \times 1 = 10)$

- Q.11 What is the use of balsa wood?
Q.12 What is a grain defect in wood?
Q.13 What are the different types of fabrics?
Q.14 Where the rubber is used in aircraft?
Q.15 How is the purpose of heat treatment?
Q.16 Define age hardening.
Q.17 Where are reinforcing tapes used?
Q.18 What is the purpose of alclad?
Q.19 What is a thermosetting material?
Q.20 What are various types of steel?

SECTION-C

Note: Short answer type questions. Attempt any twelve questions out of fifteen questions. $(12 \times 5 = 60)$

- Q.21 What are the heat treatments done on Aluminum?
Q.22 What precautions are used for storage of glue?