

- 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?
- Resin plastic
 - Thermosplastic
 - Thermosetting plastic
 - Acrylic
- Q.5 What is one common application of cellulose-based plastics in aircraft manufacturing?
- Interior upholstery
 - Exterior paint
 - Electrical wiring
 - 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?
- Epoxy
 - Silicone
 - Cyanoacrylate
 - Polyurethane
- Q.7 Which type of steel has the highest carbon content?
- Low carbon steel
 - Medium carbon steel
 - High carbon steel
 - Stainless steels
- Q.8 Which alloy is commonly used in aircraft manufacturing due to its lightweight and high strength-to-weight ratio?
- Brass
 - Magnesium alloy
 - Lead alloy
 - Zinc alloy

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

SECTION-B

Note: Objective type questions. All questions are compulsory. (10x1=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 is rubber used in aircraft?
- Q.15 What 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. (12x5=60)

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