

- Q.4 Describe the loads during different phases of flight in case of wing and fuselage.
- Q.5 Explain the different types of wings, their attachment and construction details.
- Q.6 Differentiate nose wheel, tail wheel, tricycle and dragger types of undercarriages and their utility.
- Q.7 Describe the details about the various types of inspections of aircrafts. Discuss the precautionary and remedial actions to be taken.

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**4th Sem. / AME**

**Subject : General Airframe and Aero Modelling**

Time : 3 Hrs.

M.M. : 100

**SECTION-A**

**Note:** Very Short Answer type questions. Attempt any 15 parts. (15x2=30)

- Q.1 a) What are various lighter than air aircrafts?  
b) Give example of VTOL and STOL aircraft.  
c) What is a semi monocoque structure?  
d) In what case the emergency exists are opened?  
e) What is a tail rotor?  
f) Show the main forces acting on the aircrafts as a whole.  
g) What is a stressed construction?  
h) What do you mean by safe fail?  
i) What is a bulk head?  
j) What is a rib?

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- k) Plywood is used in \_\_\_\_\_ aircraft.
- l) \_\_\_\_\_ act as wing in helicopter?
- m) \_\_\_\_\_ type of wing is used in airbus.
- n) The retractable landing gear is used to \_\_\_\_\_.
- o) The material of aircraft tyres is \_\_\_\_\_.
- p) Name two secondary controls in airplanes.
- q) What is an elevon?
- r) The shock absorbing material in landing gear is \_\_\_\_\_.

### SECTION-B

**Note:** Short answer type questions. Attempt any ten parts 10x4=40

- Q.2
- i) List the lighter than air aircrafts with their function.
  - ii) Show the structural layout of a helicopter.
  - iii) Describe the construction of windows of aircrafts.
  - iv) Differentiate between monocoque and semi monocoque structure.
  - v) Show the construction of helicopter blades.

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- vi) What is the purpose of ribs?
- vii) What is the merit of nose wheel type of undercarriage?
- viii) Show the working of shock absorber.
- ix) Name the components of mechanical control systems.
- x) What high lift devices are used in airplanes?
- xi) What is the location of fuel tanks in airplanes?
- xii) How the fuel tanks are sealed?
- xiii) What do you mean by rigging?
- xiv) What do you mean by periodical inspection?
- xv) Explain the process of minor composite part repair.

### SECTION-C

**Note:** Long answer type questions. Attempt any three questions. 3x10=30

- Q.3 Draw a neat sketch and show the major parts and the structural components of an airliner.

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