

**B.E., DEGREE EXAMINATIONS MAY/JUNE 2013**

Fourth Semester

**AERONAUTICAL ENGINEERING**

AER107: Aircraft Systems and Instrumentations

**Time: Three Hours**

**Maximum Marks: 100**

**Answer ALL Questions:-**

**PART A (10x1=10 Marks)**

1. VHF omnidirectional radio range (VOR), is a type of \_\_\_\_\_ radio navigation system for aircraft
  - a) Long-range
  - b) Short-range
  - c) Medium-range
  - d) No range
2. On one side of the runway centreline the radio receiver develops an output in which the 90Hz tone predominates. This area is called\_\_\_\_\_.
  - a) Amber sector
  - b) Red sector
  - c) Yellow sector
  - d) Blue sector
3. Which of the following hydraulic fluids has fire resistant property?
  - a) Vegetable base fluid
  - b) Viscosity based fluid
  - c) Mineral base fluid
  - d) Phosphate ester base fluid
4. \_\_\_\_\_ are self-contained hydraulic units that support an aircraft on the ground and protect the aircraft by absorbing and dissipating the shocks on landing
  - a) Retraction unit
  - b) Auxiliary gear
  - c) Shock struts
  - d) Main gear alignment unit
5. The \_\_\_ is a plunger that can be used in cold weather to inject fuel directly into the carburettor as an assist in starting the engine in cold conditions.
  - a) Engine
  - b) Starters
  - c) Selector valve
  - d) Fuel primer
6. \_\_\_ type of engine was used in the first controlled powered flight.
  - a) Inline
  - b) Outline
  - c) V type
  - d) Horizontally opposed
7. The shut off valve for each anti icing using engine bleed air section is a \_\_\_\_\_ type
  - a) Pressure regulating
  - b) Resistance
  - c) Temperature regulating
  - d) None of these
8. Freon is a fluid which boils at a temperature of \_\_\_\_\_ °F
  - a) 50
  - b) 150
  - c) 48
  - d) 39



(ii) Classify the aircraft landing gear system. (4)

23. a) (i) With a neat diagram explain jet engine fuel system. (9)

(ii) Explain the starting system of aircraft engine. (5)

**(OR)**

b) (i) What are the different types of ignition system used in aircraft engine? (8)

Explain any two in detail

(ii) Explain the different types of aircraft jet engine. (6)

24. a) Explain cabin air conditioning and pressurisation system with a schematic diagram.

**(OR)**

b) (i) Explain the De-icing and Anti-icing system used in aircraft. (7)

(ii) Explain the fire protection system used in aircraft. (7)

25. a) (i) Explain the working of vertical speed indicator with a neat diagram. (7)

(ii) Explain the working of Electronic tachometer with a neat diagram. (7)

**(OR)**

b) (i) Explain the working of altimeter with a neat diagram. (5)

(ii) Explain with the neat diagram (9)

- Bourdon tube pressure gages
- Diaphragm type pressure gages
- Vacuum type pressure gages

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