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Total No. of Pages : 02

Total No. of Questions : 09

B.Tech.(ANE) (Sem.-5)

AIRCRAFT SYSTEMS AND INSTRUMENTATION

Subject Code : ANE-311

Paper ID : [A1035]

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTION TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students has to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students has to attempt any TWO questions.

SECTION-A**Q1 Answer briefly :**

- a) What is 'Anoxia'? Explain its significance.
- b) Explain the use of pitot static system with the help of a sketch.
- c) Explain briefly the function of dump valves with respect to fuel system of an aircraft.
- d) What do you mean by gyroscopic instruments? List at least four gyroscopic instruments used in a transport aircraft.
- e) List the basic instruments coming under engine control system.
- f) Explain briefly the tolerance levels of a pilot when flying at varying altitudes.
- g) Explain the function of throttle levers.
- h) What is the function of a turn-coordinator?
- i) What are high lift devices? List at least five high lift devices.
- j) What do you mean by 'Ram Air Cooling'? What is its importance?

SECTION-B

- Q2 Explain the function and working principle of ILS.
- Q3 Explain the working principle of Mach meter with the help of a neat & labelled sketch.
- Q4 Explain the function of various components of mechanical flight control system with the help of sketches.
- Q5 Explain the working principle of 'DME'.
- Q6 Explain the function of primary and secondary control surfaces of an aircraft with the help of neat and labeled sketches.

SECTION-C

- Q7 Explain the working of following instruments :
- a) Gyro-horizon (3)
 - b) TACAN (3)
 - c) VOR (4)
- Q8 Why pressurization of a transport aircraft is required? Explain briefly the function of various components of pressurization system of an aircraft with the help of a neat labeled sketch. (2, 8)
- Q9 What do you mean by an actuation system? List various methods of actuation of a flight control system. Explain direct drive and fly-by-wire actuation systems. (2, 2, 6)