

Roll No.

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Total No. of Pages : 02

Total No. of Questions : 09

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

AIRCRAFT SYSTEMS AND INSTRUMENTATION

Subject Code : ANE-311

M.Code : 60520

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) Explain briefly '*Anoxia*' and '*Hypoxia*'.
- (b) What are high lift devices? List at least four high lift devices.
- (c) What do you mean by '*ram air cooling*'? What is its importance?
- (d) List various instruments working with the help of pitot static system.
- (e) Explain briefly the function of dump valves with respect to fuel system of an aircraft.
- (f) Explain the function of gyro-horizon.
- (g) List the basic instruments coming under '*fuel system*'.
- (h) Explain the significance of '*tolerance*' with respect to environment control system.
- (i) Explain the purpose of engine bleed.
- (j) What is the function of a turn-coordinator?

SECTION-B

- Q2 Explain gyroscope with the help of a neat and labelled diagram. Write various properties of gyroscope. List at least four gyroscopic instruments used in a transport aircraft.
- Q3 Explain the working principle of '*Altimeter*' with the help of a neat & labelled sketch.
- Q4 Write a note on '*fly-by-wire system*'.
- Q5 Explain the working of '*electro-mechanical actuator*'.
- Q6 Explain the function of primary and secondary control surfaces of an aircraft. Show primary and secondary control surfaces with the help of neat and labelled sketches.

SECTION-C

- Q7 Explain the working of following instruments : (5,5)
- (a) ILS
- (b) VORTAC
- 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 Explain '*mechanical flight control system*' of a typical aircraft. Explain the function of various components of mechanical flight control system with the help of sketches. Write merits and demerits of mechanical flight control system over fly-by-wire system. (3,5,2)

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.