

CBCS SCHEME

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18AE/AS55

Fifth Semester B.E. Degree Examination, July/August 2022 Aircraft Systems and Instrumentation

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. Describe about the primary and secondary flight controls with relevant diagrams. (10 Marks)
b. Explain about power assisted and power operated system with neat sketch. (10 Marks)

OR

- 2 a. With a neat labeled diagram, explain about electro hydraulic actuators and electromechanical actuators. (10 Marks)
b. Write short notes on :
i) Digital fly by wire system
ii) Fly by wire system. (10 Marks)

Module-2

- 3 a. Write a short note on hydraulic fluid. (06 Marks)
b. Explain a simple hydraulic system with the help of flow chart. Briefly explain about simplified Boeing 767 hydraulic system. (14 Marks)

OR

- 4 a. List out the advantages and disadvantages of hydraulic and pneumatic system. (10 Marks)
b. Explain the following with relevant sketch :
i) Brake system
ii) Landing gear system. (10 Marks)

Module-3

- 5 a. What is the purpose of aircraft fuel system? With neat sketch explain generalized fuel system of large transport aircraft. (12 Marks)
b. What are some of the factors that influence the choice of the starting system? (08 Marks)

OR

- 6 a. Explain the lubricating system components used on gas turbine engines. (10 Marks)
b. Describe about the lubrication system used for piston engines. (10 Marks)

Module-4

- 7 a. What are the requirements of fire protection system? (05 Marks)
b. Write short notes on :
i) Thermocouple system
ii) Kidde system
iii) Fenwal system. (15 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42-8=50, will be treated as malpractice.

OR

- 8 a. Explain with neat sketch about vapour cycle cooling system and air cycle cooling system used in aircraft. (12 Marks)
- b. With a schematic diagram of wing. Explain briefly about anti icing system involved in it. (08 Marks)

Module-5

- 9 Explain the following : (20 Marks)
- i) Air speed indicator
 - ii) Mach meter
 - iii) Altimeter
 - iv) Vertical speed indicator.

OR

- 10 a. Discuss and describe about the aircraft instrumentation grouping. (10 Marks)
- b. What is tachometer? With a neat sketch explain about electrical and mechanical tachometer. (10 Marks)
