



CBCS SCHEME

15AE554

Fifth Semester B.E. Degree Examination, July/August 2021 Aircraft Electrical Systems of Instrumentation

Time: 3 hrs.

Max. Marks:80

Note: Answer any FIVE full questions.

- 1 a. What is the need of flight control system? Describe the hydraulically operated flight control system. (08 Marks)
b. Explain the different types of mechanical flight control systems. (08 Marks)
- 2 a. Explain the basic concepts features and advantages of fly by wire systems. (08 Marks)
b. Write short notes on :
i) Autopilot
ii) Fly by light. (08 Marks)
- 3 a. With a neat sketch, describe a open centre hydraulic system with a neat sketch. (08 Marks)
b. What is the need of pneumatic system in aircrafts? List the sources of pneumatic power. (08 Marks)
- 4 a. Discuss the working process of high pressure pneumatic system. (08 Marks)
b. Discuss the functional elements of brake control system with a block diagram. (08 Marks)
- 5 a. Explain Gravity feed system and pressure feed system with a neat sketch. (08 Marks)
b. What are the three subsystems which are essential for the circulation of the oil list the major components of a lubrication system? (08 Marks)
- 6 a. Briefly explain the different components of a starting system. (08 Marks)
b. Describe the three different situations where ignition systems are engaged. (08 Marks)
- 7 a. What are the requirements of a environmental control system. (06 Marks)
b. Briefly explain the two methods of cooling cabin air. (04 Marks)
c. Describe the vapour cycle cooling system with a neat diagram. (06 Marks)
- 8 a. List the requirements of a fire protection system. (08 Marks)
b. Explain the different types of ice protection system. (08 Marks)
- 9 Write short notes on :
i) Altimeter
ii) Air speed indicator
iii) Machmeter
iv) Turn and slip indicator. (16 Marks)
- 10 a. What are the different engine parameter measured to monitor the thrust output? (08 Marks)
b. How the engine temperature measuring instrument classified. Explain how resistance is being measured using wheatston bridge. (08 Marks)

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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.