

CBCS SCHEME

Librarian

USN Learning Resource Centre
Acharya Institute & Technology

17AE554

Fifth Semester B.E. Degree Examination, Feb./Mar. 2022 Aircraft Electrical 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. Explain fly by wire system with neat sketch. (07 Marks)
- b. With a neat sketch, explain Autopilot system. (07 Marks)
- c. Describe Redundancy. (06 Marks)

OR

- 2 a. List out the advantages of fly by wire control over the conventional mechanical control system. (06 Marks)
- b. Describe about the primary and secondary flight controls with relevant diagrams. (14 Marks)

Module-2

- 3 Explain simple hydraulic system with neat sketch and explain briefly about simplified B767 aircraft hydraulic system. (20 Marks)

OR

- 4 a. With a neat sketch, explain typical high pressure pneumatic system and low pressure pneumatic system. (14 Marks)
- b. Write a short note on hydraulic fluid with examples. (06 Marks)

Module-3

- 5 a. Explain the fuel system for piston engine. (10 Marks)
- b. With neat diagram, explain lubricating system for jet engine. (10 Marks)

OR

- 6 a. What are some of the factors that influence the choice of starting systems? (10 Marks)
- b. Briefly explain jet engine electronic ignition system with neat sketch. (10 Marks)

Module-4

- 7 a. With neat diagram, explain generalized basic air cycle system and vapour cycle system. (14 Marks)
- b. Describe the requirement for overheat and fire protection system. (06 Marks)

OR

- 8 With neat sketch, explain the following : (20 Marks)
 - a) Thermocouple system
 - b) Lindberg pneumatic system
 - c) Kidde system
 - d) Thermal anti-icing system.

Module-5

- 9 a. Differentiate between qualitative and quantities display in aircraft instrumentation. (14 Marks)
- b. With neat diagram, explain about working principle of pitot static system in aircraft. (06 Marks)

OR

- 10 Explain the principle and operation for the following with neat labeled diagram : (20 Marks)
 - a) Turn and bank indication
 - b) Accelerometer
 - c) Airspeed indicator
 - d) Tachometer.

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.