

# CBCS SCHEME

USN Librarian  
Learning Resource Centre  
Acharya Institute & Technology

15AE554

Fifth Semester B.E. Degree Examination, Feb./Mar. 2022

## Aircraft Electrical Systems and Instrumentation

Time: 3 hrs.

Max. Marks: 80

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

### Module-1

- 1 a. Describe about the primary and secondary flight control with relevant diagrams. (08 Marks)
- b. Describe about the push pull rod and cable and pulley system with neat diagram. (08 Marks)

OR

- 2 a. With neat diagram, Discuss about power assisted and fully powered system. (08 Marks)
- b. Give detail description about FBW with suitable diagram. (08 Marks)

### Module-2

- 3 a. Describe about the open centre and closed centre hydraulic system with suitable diagrams. (08 Marks)
- b. List out the applications of pneumatic system and also explain about the low pressure pneumatic system with a figure. (08 Marks)

OR

- 4 a. Explain the Hydraulic fluid, with examples. (06 Marks)
- b. Write a note on Hydraulic accumulator. (06 Marks)
- c. List the advantages and disadvantages of hydraulic system. (04 Marks)

### Module-3

- 5 a. With neat diagrams, explain about the different types of fuel feed system. (08 Marks)
- b. Describe about the Lubricating system for Piston Engine. (08 Marks)

OR

- 6 a. What is the purpose of an aircraft fuel system? With neat sketch explain generalized fuel system of large transport aircraft. (10 Marks)
- b. Explain with neat sketch, Vane type pump. (06 Marks)

### Module-4

- 7 a. Describe about Vapour cycle system with neat diagram. (08 Marks)
- b. What are the consequences of ice formation? With neat sketch explain hot air anti-icing system. (08 Marks)

OR

- 8 Write notes on the following : (16 Marks)
  - a. Continuous Loop Detector
  - b. Kidde system
  - c. System Donner
  - d. Lindberg system

### Module-5

- 9 a. Discuss and describe about the aircraft instrumentation grouping. (08 Marks)
- b. With neat diagram, explain about the working principle of pitot-static system. (08 Marks)

OR

- 10 a. Explain about the inertial navigation system. (08 Marks)
- b. Explain different types of instruments used for RPM measurement. (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.