CBCS SCHEME

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18AE/AS55

Fifth Semester B.E. Degree Examination, Dec.2023/Jan.2024
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. With a neat sketch explain about conventional system. **(10 Marks)**

b. Describe about the primary and secondary flight controls with relevant diagram. **(10 Marks)**

OR

2 a. Describe about the three axis autopilot system with a neat diagram. **(10 Marks)**

b. Explain briefly about the power assisted and fully powered system. **(10 Marks)**

Module-2

3 a. Elucidate the operation and working principle of different types of hydraulic system. **(10 Marks)**

b. Discuss about the various components of hydraulic system with relevant diagram. **(10 Marks)**

OR

4 a. What is landing gear? Explain the different types of landing gear with relevant sketch. **(10 Marks)**

b. Write short notes on hydraulic fluid. **(05 Marks)**

c. With a neat sketch explain typical high pressure pneumatic system. **(05 Marks)**

Module-3

5 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 the lubricating system components and on gas turbines. **(10 Marks)**

OR

6 a. With a typical example. Explain fuel system for Jet engines. **(10 Marks)**

b. What are some of the factors that influence the choice of the starting system? **(10 Marks)**

Module-4

7 a. With a neat diagram, explain generalized basic air cycle system and vapour cycle system. **(14 Marks)**

b. Write short notes on ANTI – ICING system. **(06 Marks)**

OR

8 Write short notes on :

a. Thermocouple system

b. Kidde system

c. Fenwal system

d. Lindberg system. **(20 Marks)**

Module-5

9 With relevant diagram, explain the working principle of ASI, VSI, Altimeter ad Machmeter. **(10 Marks)**

OR

10 a. Discuss and describe about the aircraft instrumentation grouping. **(10 Marks)**

b. What is tachometer? With a neat sketch explain mechanical tachometer. **(10 Marks)**

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