CBCS SCHEME

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17AE/AS554

Fifth Semester B.E. Degree Examination, Aug./Sept. 2020
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 the following with a neat diagram :
i) Mechanical Actuation
ii) Electro hydraulic Actuation. **(12 Marks)**

b. Write a short note on auto pilot system. **(08 Marks)**

OR

2 a. Explain the operation of a push pull rod control system used for operating the elevator through a powered actuator unit with a neat sketch. **(10 Marks)**

b. With a neat sketch briefly explain about fly by wire system. **(10 Marks)**

Module-2

3 a. Draw the sketch of simplified bleed air system and associated aircraft systems. Explain the same. **(10 Marks)**

b. Explain a simple hydraulic system with help of flow chart. **(10 Marks)**

OR

4 Draw a neat diagram of high pressure pneumatic system and explain briefly working and pneumatic system components. **(20 Marks)**

Module-3

5 a. With a help of neat sketch, explain fuel tank. Name some of the fuel tank used. **(10 Marks)**

b. Explain briefly the operation principles involved in aircraft piston engine. **(10 Marks)**

OR

6 a. With a neat diagram, explain briefly the gravity fuel system. **(12 Marks)**

b. What are the functions of lubrication system used in aircraft engines. **(08 Marks)**

Module-4

7 Explain the following with neat sketch.
i) Vapour cycle cooling system
ii) Liquid cooling system. **(20 Marks)**

OR

8 a. With a schematic diagram of a wing, explain anti-icing system in aircraft. **(10 Marks)**

b. Draw and explain fire detection system in an aircraft engine bag. **(10 Marks)**

Module-5

9 a. Explain gyroscopic instruments used in aircraft with neat sketches. **(10 Marks)**

b. With a neat sketch, describe the mach warning system. **(10 Marks)**

OR

10 Explain the following :
i) Altimeter ii) Airspeed indicator iii) Mach meter iv) Thermo couple. **(20 Marks)**

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