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10AE848

Eighth Semester B.E. Degree Examination, Aug./Sept. 2020
Aircraft Systems and Instrumentation

Time: 3 hrs.

Max. Marks: 100

Note: Answer FIVE full questions, selecting at least TWO questions from each part.

PART - A

- 1 a. Describe about the push pull rod and cable pulley system with neat diagram. (10 Marks)
- b. Explain the following with a neat diagram:
 - (i) Electro-Hydrostatic actuator. (10 Marks)
 - (ii) Electro-mechanical actuator. (10 Marks)
- 2 a. Write a short note on hydraulic fluid. (05 Marks)
- b. List the advantage and disadvantages of hydraulic system. (05 Marks)
- c. Explain typical pneumatic system and its components. (10 Marks)
- 3 a. What is the purpose of an aircraft fuel system? With neat sketch explain generalized fuel system of large transport aircraft. (10 Marks)
- b. List the lubricating oil system components and explain. (10 Marks)
- 4 a. What are the salient requirements necessary for the successful functioning of an environmental control system? (10 Marks)
- b. Briefly explain the air cycle cooling system. (10 Marks)

PART - B

- 5 a. Explain the common forms of data display applied to aircraft instruments. (10 Marks)
- b. Explain navigation instrument. (10 Marks)
- 6 Discuss the operation and working principle of flight instruments like ASI, VSI, Mach motor and Altimeter with block diagram. (20 Marks)
- 7 a. Define Gyroscope. List out the properties of gyroscope. (10 Marks)
- b. Define Gyro horizon. Explain Vacuum-Driven Gyro Horizon. (10 Marks)
- 8 a. What is tachometer? With neat sketch explain a mechanical tachometer. (10 Marks)
- b. With a neat sketch, describe the radiation pyrometer. List its advantages. (10 Marks)

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.