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Fifth Semester B.E. Degree Examination, July/August 2021

Aircraft Systems and Instrumentation

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions.

1.
 - a. Explain EHA and EMA with neat labeled diagram. (10 Marks)
 - b. Describe the advantages and disadvantages of Autopilot system. (04 Marks)
 - c. With a neat diagram explain DFBW. (06 Marks)
2.
 - a. With relevant sketch explain the working of primary and secondary control surface of aircraft. (14 Marks)
 - b. What is auto pilot system? How it works? (06 Marks)
3.
 - a. Explain landing gear system working using pneumatic system. (10 Marks)
 - b. List the advantages and disadvantages of hydraulic system. (05 Marks)
 - c. How the brake system works? (05 Marks)
4.
 - a. What is PRSOV? Explain its working. (06 Marks)
 - b. Explain briefly with relevant sketch, about the component of hydraulic system. (10 Marks)
 - c. Write a short note on hydraulic fluid. (04 Marks)
5.
 - a. Explain the working of multi cylinder engine with neat sketch. (08 Marks)
 - b. What are the lubricating system used in aircraft engines? (07 Marks)
 - c. Write a note on types of fuels used for cargo aircraft and combat airplanes. (05 Marks)
6.
 - a. What are some of the factors that influence the choice of the starting system? (10 Marks)
 - b. With a typical example? Explain fuel systems for jet engines. (10 Marks)
7.
 - a. Explain the fire protection systems used on the aircraft with relevant sketches. (16 Marks)
 - b. List out the requirements of fire detection system. (04 Marks)
8. With neat diagram, explain generalized basic air cycle system and vapor cycle system its working operation and function of its components. (20 Marks)
9.
 - a. Describe briefly about gyroscope. List out the properties of gyroscope. (08 Marks)
 - b. Discuss and describe about the aircraft instrumentation grouping. (12 Marks)
10. With a relevant sketch, explain the working of
 - a. Machmeter
 - b. Tachometer
 - c. Altitude indicator
 - d. Vertical speed indicator
 - e. ASI. (20 Marks)