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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)