

# CBCS SCHEME

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18AE/AS55

## 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)

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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.