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Fifth Semester B.E. Degree Examination, June/July 2023 Aircraft Systems and Instrumentations

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, choosing one full question from each module.

Module-1

- 1 a. With neat sketch, explain the primary and secondary control surface of fighter aircraft. (10 Marks)
b. What is Fly by wire. Explain digital fly by wire system. (10 Marks)

OR

- 2 a. Explain with diagram push- pull control rod system. (10 Marks)
b. With figure explain fly by wire actuator. (10 Marks)

Module-2

- 3 Explain the working principle of different types of hydraulic system and also write notes on various components of hydraulic systems. (20 Marks)

OR

- 4 Explain the working principle of different types of pneumatic system and also explain about the landing gear systems with neat diagrams. (20 Marks)

Module-3

- 5 a. What are the lubricating system used in aircraft engines explain? (10 Marks)
b. Write a note on Types of fuels used for cargo aircraft and combat airplanes. (10 Marks)

OR

- 6 a. Explain typical starting and ignition systems of an aircraft. (10 Marks)
b. List and describe the components of multi engines and typical examples for piston and jet engines. (10 Marks)

Module-4

- 7 a. Explain typical Air cycle systems of aircraft with figure. (10 Marks)
b. Explain vapour cycle systems of an aircraft with figure. (10 Marks)

OR

- 8 a. Explain Anti icing and deicing systems for an aircraft. (10 Marks)
b. Explain Fire protection systems. (10 Marks)

Module-5

- 9 Explain flight instruments and navigation instruments in detail. (20 Marks)

OR

- 10 Write short note on:
i) Air speed indicator
ii) Mach meters
iii) Altimeters
iv) Tachometers
v) Temperature gauges
vi) Pressure gauges
vii) TAS and EAS. (20 Marks)
