

CBCS SCHEME

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15AE81

Eighth Semester B.E. Degree Examination, July/August 2021 Avionics

Time: 3 hrs.

Max. Marks:80

Note: Answer any FIVE full questions.

- 1 a. Explain split bus bar system used for electrical power distribution on board the aircraft. (08 Marks)
b. List the various switching devices available and explain the following switches:
i) Pressure switches
ii) Time switches
iii) Proximity switches. (08 Marks)
- 2 a. Explain briefly about the special purpose cables in aircraft electrical systems. (05 Marks)
b. What do you mean by pole and throw? Explain with the help of suitable sketches the possible arrangements. (05 Marks)
c. Explain the importance of avionics systems in civil and military aircrafts. (06 Marks)
- 3 a. Explain different inflight alignment methods. (08 Marks)
b. Explain roll rate command control with neat diagram. (08 Marks)
- 4 a. Explain basic operational principle of an inertial navigation system. (08 Marks)
b. What are the common modes of failures in avionics systems? (08 Marks)
- 5 a. Explain the important functions of the following symbols in PFD:
(i) PTH (ii) HDGSEL (iii) FD (iv) DH
(v) THRHL D (vi) R (vii) ALT (viii) G/S (10 Marks)
b. Describe the quantities that are derived from Pitot tube. (06 Marks)
- 6 a. Describe modulators and demodulators. (06 Marks)
b. Explain the functions of the following:
(i) DME (ii) CWLU (iii) ELT (iv) TCS (v) TCAS (10 Marks)
- 7 a. Write short notes on the following: (i) EPROM (ii) EEPROM (06 Marks)
b. With a neat schematic block diagram, explain the overall avionics system architecture for a military aircraft. (10 Marks)
- 8 a. Briefly discuss the following: (i) HOTAS (ii) HUD (10 Marks)
b. List the advantages and disadvantages of liquid crystal display for use in flight deck instrument display. (06 Marks)
- 9 a. Briefly explain the different elements of electronic warfare. (08 Marks)
b. Explain with a neat sketch electrical data bus system. (08 Marks)
- 10 a. Explain with neat schematic layout the Fire control system. (08 Marks)
b. With the help of schematic diagram, briefly explain the different word formats used in MIL STD 1553 B data bus. (08 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.