



# CBCS SCHEME

15AE81

Eighth Semester B.E. Degree Examination, Dec.2019/Jan.2020

## Avionics

Time: 3 hrs.

Max. Marks: 80

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

### Module-1

- 1 a. Explain bus bar, split bar with a neat sketch. (10 Marks)  
b. Explain the importance of avionics systems in civil and military aircrafts. (06 Marks)

OR

- 2 a. Describe the construction and operation of mercury switch arranged to 'break' a circuit. (08 Marks)  
b. What do you mean by pole and throw? Explain with the help of suitable sketches the possible arrangements. (08 Marks)

### Module-2

- 3 a. Explain the structure of stable plate form, with a neat diagram. (08 Marks)  
b. Explain the importance of compass swing. (08 Marks)

OR

- 4 a. What is a fly by wire system? With neat diagram, explain the concepts and features. (10 Marks)  
b. Explain pitch and roll rate, with a neat block diagram. (06 Marks)

### Module-3

- 5 a. List the basic flight instruments used on the aircraft represent with a schematic diagram basic 'six' and 'basic T' type of flight instrument grouping. (08 Marks)  
b. Draw a functional block diagram and explain the digital air data computer used for onboard air data processing. (08 Marks)

OR

- 6 a. What is an oscillator? How an oscillator generates sine and square wave forms? (08 Marks)  
b. Briefly explain the following: (i) Notch antenna. (ii) Slot antenna. (08 Marks)

### Module-4

- 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)

OR

- 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)

### Module-5

- 9 a. Briefly explain the different elements of electronic warfare. (08 Marks)  
b. Explain with a neat sketch electrical data bus system. (08 Marks)

OR

- 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.