USN

**15AE81**

## Eighth Semester B.E. Degree Examination, Dec.2023/Jan.2024
## 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 different Inflight Alignment methods.                                      (08 Marks)
   b.  Explain Roll rate command control, with neat diagram.                              (08 Marks)

### OR

4  a.  Explain Basic operational principle of an inertial navigation system.              (08 Marks)
   b.  What are the common rules of failures in Avionics systems?                         (08 Marks)

### Module-3

5  a.  Explain the important functions of the following symbols in PFD :
       i)   PTH          ii)  HDGSEL         iii)  FD         iv)  DH
       v)   THRHLD       vi)  R              vii)  ALT        viii)  G/S.                 (10 Marks)
   b.  Describe the quantities that are derived from Pitot tube.                          (06 Marks)

### OR

6  a.  Describe the Modulator and Demodulators.                                           (06 Marks)
   b.  Explain the functions of the following :
       i)  DME    ii)  CWLU    iii)  ELT    iv)  TCS    v)  TCAS.                         (10 Marks)

### Module-4

7  a.  With a neat sketch, explain the Architecture of a general microprocessor.          (08 Marks)
   b.  Write short notes on :  i)  CRT Display    ii)  Plasma Panel.                       (08 Marks)

### OR

8  a.  Explain the classification of a Memory.                                            (08 Marks)
   b.  With a neat sketch, explain the working principle of head up display.              (08 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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