B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

February / March 2023 Semester End Main Examinations

Programme: B.E.   Semester: VII
Branch: Institutional Elective   Duration: 3 hrs.
Course Code: 21AE7IEANS   Max Marks: 100
Course: Avionics and Navigation Systems   Date: 22.02.2023

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

UNIT - I

1   a)   Explain about the basic elements of avionics systems   **10**

b)   Explain about the design drivers of avionics architecture   **10**

OR

2   a)   What are the steps involved in design of avionics system? Explain in detail   **10**

b)   Explain the functional requirements of Integrated Avionics and weapon system (AWS)   **10**

UNIT - II

3   a)   Discuss the various avionics architecture in detail   **10**

b)   Explain the ARINC-429 and ARINC-629 data bus in detail   **10**

OR

4   a)   Explain in detail about MIL – STD – 1553 B digital data bus used in modern military aircrafts along with suitable sketches   **10**

b)   Write short notes on the following: -   **10**

Computer Memories (2) Microprocessors

UNIT - III

5   a)   Explain the working Principle of CRT with a suitable figure   **10**

b)   Write short notes on LED and LCD displays along with suitable sketches   **10**

UNIT - IV

6 a) Describe the principle of operation of Inertial Navigation System (INS) with the help of a block diagram in detail   **10**

   b) With the help of neat diagram, write a short note on Automatic direction finding (ADF)   **10**

UNIT - V

7 a) Explain the working of pitot static tube along with neat sketches. Also describe the air data quantities obtained from it   **10**

   b) List out the basic six flight instruments and explain in detail with suitable sketches   **10**

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