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**MANIPAL INSTITUTE OF TECHNOLOGY**  
MANIPAL  
(A constituent unit of MAHE, Manipal)

**VII SEMESTER B.TECH. (AERONAUTICAL ENGINEERING)**  
**END SEMESTER EXAMINATIONS, DEC/JAN 2020**

**SUBJECT: AVIONICS AND NAVIGATION SYSTEMS [AAE 4103]**

**REVISED CREDIT SYSTEM**  
**(XX/XX/2020)**

Time: 3 Hours

MAX. MARKS: 50

**Instructions to Candidates:**

- ❖ Answer **ALL** the questions.
- ❖ Missing data may be suitable assumed.

- 1A.** What is the importance of Head Up Display? **(02)**
- 1B.** What are the advantages of Digitally Generated Moving Color Map Displays? **(03)**
- 1C.** Explain Electronic Flight Instrument System in detail. **(05)**
- 2A.** How a vertical speed indicator works? **(02)**
- 2B.** Explain space segment of GPS. **(03)**
- 2C.** Explain VOR. What are the various equipment used? **(05)**
- 3A.** What is the function of stormscope in an aircraft? **(02)**
- 3B.** What is the working principle of Hall effect accelerometer? **(03)**
- 3C.** Explain aircraft batteries in detail. **(05)**
- 4A.** How DGPS is used for aircraft landing? **(02)**
- 4B.** Explain software development process with proper diagrams. **(03)**
- 4C.** Explain Instrument Landing System in detail. **(05)**
- 5A.** What are the various network topologies? **(02)**
- 5B.** Briefly explain various digital data bus systems. **(03)**
- 5C.** Explain MIL-STD 1553 data bus in detail with all necessary diagrams. **(05)**