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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
(28/12/2020)

Time: 3 Hours

MAX. MARKS: 50

Instructions to Candidates:

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

- 1A.** What are the various desired characteristics of an avionic system? **(02)**
- 1B.** Explain Multi-function display (MFD). **(03)**
- 1C.** Explain various sub systems related to avionics in detail. **(05)**
- 2A.** Explain the principle of trilateration. **(02)**
- 2B.** Explain GPS signals. **(03)**
- 2C.** Explain the Automatic Direction Finder in detail with diagram. **(05)**
- 3A.** Write the difference between VFR and IFR. **(02)**
- 3B.** Explain the working principle of Ring Laser Gyro. **(03)**
- 3C.** Explain aircraft lighting systems in detail. **(05)**
- 4A.** What do you mean by dissimilar redundancy? **(02)**
- 4B.** Explain roll rate command control with proper diagram. **(03)**
- 4C.** Explain Microwave Landing System in detail. How is it better than ILS? **(05)**
- 5A.** What are the various non-dispensable payloads in UAS? **(02)**
- 5B.** What are the various equipments needed for FMS? Explain each in brief. **(03)**
- 5C.** Explain ARINC 429 data bus in detail with all necessary diagrams. **(05)**