

Reg. No.									
----------	--	--	--	--	--	--	--	--	--



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

**VII SEMESTER B.TECH. (AERONAUTICAL ENGINEERING)**

**END SEMESTER EXAMINATIONS, DEC 2018**

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

**REVISED CREDIT SYSTEM**  
**(29/12/2018)**

Time: 3 Hours

MAX. MARKS: 50

**Instructions to Candidates:**

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

- 1A.** What do you mean by situational awareness in the aircraft? Explain it with example. **[03]**
- 1B.** What are the basic types of faults presented by the control display unit? Briefly explain. **[03]**
- 1C.** What is the basic theory behind the autopilot? Briefly explain in the context of aircraft. **[04]**
- 2A.** What is the terrain mapping? How radar will be used to map the terrain? **[04]**
- 2B.** What are the typical components of an aircraft weather radar? **[03]**
- 2C.** What is the purpose of GCU? Briefly explain working principle? **[03]**
- 3A.** Compare the civil and military aircraft data bus protocol. **[03]**
- 3B.** Explain the components and function of electropneumatic air data systems. **[03]**
- 3C.** What is SSR? Explain its working principle with neat diagram. **[04]**
- 4A.** What are the distinctive features of the VOR? What is the disadvantage of VOR? Whether VOR provides universal coverage or restricted coverage and why? **[05]**
- 4B.** Why MLS? Explain based on the following term: Channel, operational inflexibility, aircraft compatibility, adverse weather and signal quality. **[05]**

- 5A.** Sketch the Airbus A-380 integrated flight deck with instrument panels and explain their functions. **[05]**
- 5B.** Explain the Generalized dissimilar redundant flight control system architecture with neat diagram. **[03]**
- 5C.** What is G1000 PFD? Sketch it. **[02]**