Reg. No.										

MANIPAL INSTITUTE OF TECHNOLOGY

MANIPAL

A Constituent Institution of Manipal University

VI SEMESTER B.TECH. (OE-II AERONAUTICAL ENGINEERING)

MAKEUP EXAMINATIONS, JUNE 2017

SUBJECT: INTRODUCTION TO AVIONICS AND NAVIGATION SYSTEMS [AAE 3282]

REVISED CREDIT SYSTEM
(24/06/2017)

Time: 3 Hours MAX. MARKS: 50

Instructions to Candidates:

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

1A. Briefly write the FMS database. **(02)**

1B. Explain the instrumented landing system with neat diagram? **(03)**

1C. What is longitudinal motion of aircraft? Explain all the longitudinal motion derivatives of aircraft with neat diagram? **(05)**

2A. Write name of 10 civil and military aircraft avionics subsystems? **(02)**

2B. What do you mean by autopilot? Explain it with neat diagram. **(03)**

2C. Sketch the flight management system block diagram and explain its function in flight planning, navigation and guidance. **(05)**

3A. What are the basic differences between ARINC-429 and MIL-STD 1553B? **(02)**

3B. What is the principle of VOR? Explain the VOR systems and operation with neat diagrams. **(04)**

3C. Sketch the air data computational flow diagram and explain its function and outputs. **(04)**

4A. What is PFD, ND and MFD? **(02)**

4B. What is the importance of fly by light (FBW) over FBW? Explain the following: **(05)**

(i) Voting, monitoring and consolidation

(ii) Control law implementation

(iii) Reconfiguration in the event of a failure

4C. Explain the MIL-STD 1553 B Databus. **(03)**

5A. How AHRS is different than INS? **(02)**

5B. Explain the working principle of MLS with neat diagrams. **(03)**

5C. What is simple HUD schematic diagram? Explain the 3D Head motion box concept. **(05)**