

R09

Code No: 58089

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech IV Year II Semester Examinations, May - 2017

AVIONICS AND INSTRUMENTS

(Aeronautical Engineering)

Time: 3 Hours

Max. Marks: 75

**Answer any Five Questions
All Questions Carry Equal Marks**

- 1.a) Define 'Data-bus' and its role on an aircraft considering ARINC 429 as an example.
- b) Discuss the advantages of introducing modularity in avionics architecture. [8+7]
2. Explain the working of the following and also discuss how pilot is made aware of the output from each of them.
 - a) Attitude direction indicator
 - b) Horizontal situation indicator
 - c) Airspeed indicator [5+5+5]
- 3.a) Describe the working of the following in detail
 - i) VHF Omni range
 - ii) Distance Measuring Equipment
- b) Explain the concept of hyperbolic navigation. [10+5]
4. What is a Flight Management System? Elaborate its key functions. [15]
- 5.a) Describe the working of electrically signaled hydraulically powered actuator systems.
- b) Describe the working of a Flight Data Recorder in detail. [5+10]
- 6.a) Describe the working of Ground Proximity Warning system.
- b) Highlight the role played by air-to-ground communication in improving the safety of the aircraft. [9+6]
- 7.a) Explain the salient features and operating procedure of 'Surveillance Radar Element'.
- b) What is 'Airborne Early Warning System'? [10+5]
- 8.a) Describe the working of (i) Sun sensor (ii) Magnetometer
- b) Discuss the civilian applications of radar. [10+5]

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