R09

Code No: 58089

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech IV Year II Semester Examinations, April - 2018
AVIONICS AND INSTRUMENTS
(Aeronautical Engineering)

Time: 3 Hours **Max. Marks: 75**

Answer any Five Questions
All Questions Carry Equal Marks
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1.a) Explain the architecture of an optical data bus system.
b) Describe in brief, the micro-electronic systems used in aircraft.
c) Explain ARINC 629. [4+4+7]

2.a) Describe the design and functioning of air data sensors.
b) Describe the glass flight deck.
c) Describe the attitude and direction indicators (which were mechanical in design) in early aircraft. [5+5+5]

3.a) Describe the Flight Management System.
b) Explain the navigational aids used in the aircraft.
c) Describe the VHF Omnirange system. [5+5+5]

4.a) Describe the ILS approach.
b) What is GPS Overlay programme?
c) How does satellite navigation work for an aircraft flight? [5+4+6]

5.a) What are the flight control functions required for an airplane flight? What are the inter-relationships amongst them?
b) What is Fly by wire?
c) Describe the flight control system of Boeing 777. [5+5+5]

6.a) Describe how a GPW (Ground Proximity Warning) System works.
b) Describe the scope and functioning of air – ground communication link.
c) Explain about air-ground SATCOM. [5+5+5]

7.a) Describe the navigation system of a military aircraft.
b) Describe the FMS (Flight Management System) of a military aircraft. What is the role of the pilot during different phases and different circumstances?
c) Explain air-to-air-refuelling method in military Aircraft Systems. [5+5+5]

8.a) Describe a sun sensor, its functioning and utility.
b) Explain in detail, the telemetry system in a satellite and its requirement.
c) What is the attitude of a satellite? How is it determined? [5+5+5]

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