

B.E., DEGREE EXAMINATIONS: MAY/JUNE 2013

Sixth Semester

AERONAUTICAL ENGINEERING

AER113: Avionics

Time: Three Hours

Maximum Marks: 100

Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

1. Which one of the following equipment is mandatory for civil airliners?
 - a) Electronic Jammer
 - b) HMD
 - c) ATC transponder
 - d) Tracking Radar
2. The major environmental requirement for a modern military avionics system is
 - a) Pressure
 - b) Cooling
 - c) Weight
 - d) EMI/EMC
3. Which of the following 8085 instructions is a data transfer instruction?
 - a) MVI C,00H
 - b) DAD D
 - c) JNC 8300H
 - d) CMP B
4. Which one of the following is a volatile memory?
 - a) DRAM
 - b) Flash memory
 - c) PROM
 - d) EPROM
5. The avionics architecture implemented in airbus A380 aircraft is
 - a) Centralized
 - b) Federated
 - c) Distributed
 - d) Integrated Modular Avionics
6. The data rate of ARINC 429 data bus for critical flight operations is
 - a) 12.5 kHz
 - b) 100 kHz
 - c) 1 MHz
 - d) 2 MHz
7. Which one of the following component is important for a virtual cockpit system?
 - a) Optical HUD
 - b) Binocular HMD
 - c) HDD
 - d) 'Q' HUD
8. The basic concept behind a synthetic vision display system is
 - a) Data fusion
 - b) Speech recognition
 - c) Pattern matching
 - d) Knowledge based expert

(OR)

- b) Explain MIL-STD-1553B data bus in detail bringing out clearly the bus architecture, word format and coupling methods.

24. a) (i) Explain the various types of CRT used in avionics. (10)
(ii) Discuss the elements of a touch panel and explain its working principle. (4)

(OR)

- b) (i) With a block schematic explain the basic principle of HUD and describe the working of HUD electronics in detail. (10)
(ii) Explain the concept of DVI with examples. (4)

25. a) (i) What is the need for a communication system in an aircraft? Explain the operation of satellite communication in detail. (6)
(ii) Describe the arrangement and working principle of stable platform inertial navigation system and compare it with strapdown inertial navigation. (8)

(OR)

- b) (i) Describe a FBW flight control system and discuss the redundancy concept with suitable diagram. (8)
(ii) What is Electronic warfare? Explain the techniques of electronic warfare. (6)
