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Question Paper Code : 31016

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2010.

Seventh Semester

Aeronautical Engineering

AE 1401 — AVIONICS

(Regulation 2004)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What are the major drivers for Avionics in civil transport aircraft?

2. What is the importance of MEMS in space applications?

3. What do you mean by brick walling in Avionics Architecture?

4. What is the basic principle behind data transfer using ARINC 629?

5. What is the importance of timing diagram in microprocessor?

6. What do you mean by memory mapping?

7. What is the importance of MFKs?

8. Define Data staleness problem in DFBW control.

9. Differentiate ECM from ECCM.

10. What is the importance of certification?

PART B — (5 × 16 = 80 marks)

11. (a) Discuss the importance of various 'illities' in Avionics systems. (16)

Or

(b) Discuss the importance and salient features of Avionics in Space systems. (16)

12. (a) Describe the applications of 8085 microprocessor in Avionics with neat block diagrams. (16)

Or

(b) (i) Differentiate Memory mapped I/O from Peripheral mapped I/O. (6)

(ii) Explain the following instructions :

(1) DA

(2) RLC

(3) DAD. (4 + 4 + 2)

13. (a) Discuss the ARINC 429 data bus in detail. (16)

Or

(b) (i) Discuss the Pave pillar Architecture with neat diagrams. (10)

(ii) Explain the role of timings in ARINC 629. (6)

14. (a) Explain the principle and operation of HUD with neat diagrams. (16)

Or

(b) Discuss the following :

(i) Colour CRT

(ii) EL

(iii) DVI. (6 + 4 + 6)

15. (a) Discuss maintainability and Reliability concepts in detail (16)

Or

(b) (i) Explain inertial sensors and discuss how they are used in INS. (10)

(ii) Differentiate Fly by wire from Fly by light FCS. (6)
