B.E. DEGEREE EXAMINATIONS: NOV/DEC 2010

Fifth Semester

AERONAUTICAL ENGINEERING

U07AR505: Aircraft Electronics and Microprocessors

Time: Three hours   **Maximum Marks: 100**

Answer all questions

PART A (10 x 1 = 10 Marks)

1. When a PN junction is forward biased, then

  (a) Depletion region decreases   (b) Minority carriers are not affected

  (c) Holes and electrons move away from the junction   (d) Barrier breaks down

2. The SCR is a
   (a)Three layer PNPN semiconductor device with three terminals
   (b)four layer PNPN semiconductor device with four terminals
   (c)four layer PNPN semiconductor device with three terminals
   (d)four layer PNPN semiconductor device with two terminals

3. The binary equivalent of a decimal number 123.

  (a) 1111011   (b) 1111010   (c) 1111001   (d) 1110011

4. The most widely used universal gates are
   (a) NAND & NOR gates   (b) AND & NOR gates
   (c) NAND & OR gates   (d) AND & OR gates

5. Register is a
   (a) A Group of gates to store a word   (b) A Group of FFs to store a word
   (c) A Group of adders to store a word   (d) A Group of counters to store a word

6. The basic elements of a microprocessor are
   (a) ALU, memory   (b) ALU, control unit
   (c) ALU, memory, I/O devices   (d) ALU, control unit, memory

7. Floppy disc is

  (a) Flexible storage   (b) Permanent storage   (c) ROM   (d) Fast storage

8. DMA facilitates data to move into and out of the system
   (a) On first come first serve basis   (b) With equal time delay
   (c) Without subroutine   (d) Without program intervention

9. A modulator is a device to
   (a) Separate two frequencies
   (b) Extract information from the carrier
   (c) Amplify the audio frequency signal
   (d) Impress the information on a radio frequency carrier

10. The AM broadcast band is given by

  (a) 10 Khz to 30 Khz   (b) 500 Khz to1500 Khz   (c) 10 Khz to1500 Khz (d) 10 Khz to 300 Khz

PART B (10 x 2 =20 Marks)

11. What is a Tunnel diode? Mention its applications.
12. List the Applications of a transistor.
13. What is a decoder?
14. Write the truth table of Half adder.
15. Name the flags available in 8085.
16. How many address lines and data lines are available in M6800?
17. List the typical control signals involved in EPROM interfacing.
18. What is baud rate?
19. What is a Radio Transmitter?
20. What is carrier wave?

PART C (5 x 14 = 70 Marks)

21. a) Discuss the V-I characteristics of P-N diode and Zener diode with their construction and principle of operation **(OR)**

    b) Explain the operation of full wave rectifier with necessary waveforms.

22. a) Explain the principle of operation of A/D and D/A converters. **(OR)**

    b) Draw the logic diagram of a full adder & explain its operation.

23. a) With the help of a neat functional block diagram, explain in detail the architecture and the salient features of 8085 microprocessor. **(OR)**

    b) Explain the instruction format and addressing modes of 8085processor with example for each type.

24. a) Explain with a neat diagram how to interface PROM and Read/Write memory with a microprocessor.. **(OR)**

    b) Explain the different communication modes in a microprocessor system.

25. a) With neat sketches, discuss the operation of a Radio Receiver.

(OR)

    b) Explain the concept and theory of automatic direction finder systems.

****