



Register Number:.....

**B.E DEGREE EXAMINATIONS: MAY 2015**

(Regulation 2009)

Fifth Semester

**AERONAUTICAL ENGINEERING**

AER112: Digital Electronics And Microprocessors

**Time: Three Hours**

**Maximum Marks: 100**

**Answer all the Questions:-**

**PART A (10 x 1 = 10 Marks)**

1. Op-amplifier have \_\_\_\_\_ basic terminals
  - a) 5
  - b) 4
  - c) 3
  - d) 2
2. Decoder converts binary information from
  - a) n input line to maximum of  $2^n$  unique output lines
  - b) n input line to maximum of  $3^n$  unique output lines
  - c)  $2^n$  input line to maximum of  $2^n$  unique output lines
  - d)  $2^n$  input line to maximum of  $4^n$  unique output lines
3. Find the correct high level language
  - a) Visual Basic
  - b) FORTRAN77
  - c) Oracle
  - d) MS-Word
4. In general, the mnemonic for each microprocessor instruction has two parts, called the \_\_\_\_\_ and \_\_\_\_\_
  - a) Opcode, Octal code
  - b) Operand, Hex-code
  - c) Opcode, Operand
  - d) Operand, Binary code
5. Assembly language program can be written by using
  - a) Octal codes
  - b) Binary number
  - c) Hexadecimal codes
  - d) Decimal number
6. A counter is designed simply by loading an appropriate number into one of the registers by using
  - a) INR, DCR
  - b) DCR, DAD
  - c) INR, MOV
  - d) DCR, LHLDS

7. A single 8259 can accept as many as \_\_\_\_\_ different interrupt request
  - a) Eight
  - b) Five
  - c) Seven
  - d) Six
8. The 8253 programmable interval timer can operate with clock frequency from
  - a) AC to 2 MHz
  - b) AC to 3 MHz
  - c) DC to 2 MHz
  - d) DC to 3MHz
9. The storage cell for a DRAM is actually a
  - a) Resistor
  - b) Inductor
  - c) Capacitor
  - d) Actuator
10. \_\_\_\_\_ provides the fastest memory access times
  - a) DRAM
  - b) ROM
  - c) EPROM
  - d) SRAM

**PART B (10 x 2 = 20 Marks)**

11. Define slew rate
12. What is meant by Register?
13. What is the difference between instruction cycle and machine cycle?
14. How does the microprocessor know how and when to start?
15. What is the difference between stack and subroutine?
16. Draw the flowchart for time delay loop.
17. What are the features of 8259 programmable interrupt controller?
18. Write short notes on 8253 programmable interval timer.
19. What is the difference between synchronous and asynchronous serial data transmission?
20. What is flash memory?

**PART C (5 x 14 = 70 Marks)**

21. a) Explain the working principle of any two of the direct type A/D converter.

**(OR)**

- b) i) Explain the working principle of Multiplexer. (7)
- ii) Explain the working principle of Encoder (7)
22. a) Explain the instruction set of 8085 microprocessor based on functional categories and word size with examples.

**(OR)**

b) Draw the functional block diagram of microprocessor 8085 and explain in brief.

23. a) Write an assembly language program to find the largest number using 8085 microprocessor.

**(OR)**

b) Explain the timing diagram of IN and OUT instructions in peripheral I/O.

24. a) Explain the block diagram of the 8255 programmable peripheral interface and explain its various modes of operation.

**(OR)**

b) List the major components of the 8279 keyboard/display interface and explain their functions.

25. a) Illustrate the 8251 programmable communication interface with help of block diagram.

**(OR)**

b) Explain the application of Traffic Light Controller using microprocessor 8085.

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