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Total No. of Questions—12]

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[3962]-149

S.E. (Electrical) (Second Semester) EXAMINATION, 2011
MICROPROCESSOR FUNDAMENTALS AND PROGRAMMING
(2008 PATTERN)

Time : Three Hours**Maximum Marks : 100**

N.B. :- (i) Answer *three* questions from Section I and *three* questions from Section II.

(ii) Answers to the two Sections should be written in separate answer-books.

(iii) Neat diagrams must be drawn wherever necessary.

(iv) Figures to the right indicate full marks.

(v) Your answers will be valued as a whole.

(vi) Use of logarithmic tables, slide rule, Mollier charts, electronic pocket calculator and steam tables is allowed.

(vii) Assume suitable data, if necessary.



SECTION I

1. Draw Architecture of 8085 Microprocessor and explain function of each block. [16]

Or

2. (a) Explain various addressing modes of 8085 with examples. [8]

(b) Draw memory interface diagram for interfacing of 10 KB RAM and 4 KB PROM to 8085. [8]

P.T.O.

3. (a) Explain hardware interrupt structure of 8085 microprocessor. [8]
 (b) Write an assembly language program to separate positive and negative numbers from an array whose starting address is A000H and length is AFH. Store positive numbers C000H and negative numbers D000H onwards. [8]

Or

4. (a) Explain timing diagram of LDAX instruction. [8]
 (b) Write an assembly language programme to arrange numbers in given memory array starting from D000H in ascending order. The length of array is K0H. [8]
5. (a) Explain various data transfer schemes. [10]
 (b) Explain RS232 standard. [8]

Or

6. (a) Draw and explain block diagram of 8251. [10]
 (b) Explain command instruction format and status word format of 8251. [8]

SECTION II

7. (a) Draw and explain functional block diagram of 8255 PPI. [8]
 (b) Write an assembly language program to configure 8255 ports :
 PA — Input, Mode 0 PB — Output, Mode 0
 PC upper-output PC lower-output
 8255 is interfaced in I/O mapped I/O mode. [8]

Or

8. (a) Draw and explain functional block diagram of 8254. [8]
(b) Explain mode 1 and mode 2 of 8254. [8]
9. (a) Draw and explain interfacing dia. of ADC 0809 to 8085 and write an assembly language programme for the same. [10]
(b) Explain measurement of frequency with the help of 8085 microprocessor. [8]

Or

10. (a) Explain interfacing dia. of interfacing of DAC 0808 to 8085 microprocessor. Write an assembly language programme to generate positive going ramp. [10]
(b) Explain with block diagram measurement of power factor with 8085 microprocessor. [8]
11. Explain with interfacing dia. and flow-chart the following applications by using 8085 microprocessor :
(i) Control of stepper motor
(ii) Temperature measurement. [16]

Or

12. Explain with interfacing dia. and flow-chart the following applications by using 8085 microprocessor :
(i) Control of DC motor
(ii) Speed measurement. [16]