May/June
2010

Total No. of Questions—12] [Total No. of Printed Pages—4

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S.E. (Electrical) (II Sem.) EXAMINATION, 2010

MICROPROCESSOR FUNDAMENTALS AND APPLICATIONS

(2008 COURSE)

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

(*v*) Assume suitable data, if necessary.

SECTION I

1. (*a*) Draw and explain in brief architecture of 8085 microprocessor. [10]

(*a*) Explain various addressing modes of 8085 microprocessor. [8]

Or

2. (*a*) Explain the following instructions along with example :

LDAX rp

SBB M

RLC

PCHL [8]

P.T.O.

(*b*) Explain the Interface 16 Kbytes of EPROM and 8 Kbytes of RAM with 8085. Starting address of EPROM is 0000 H. [10]

3. (*a*) Write a program to find the largest number from an array of ten numbers which are stored from memory location D000H onwards. Store the answer of E000H. [8]

(*b*) Explain SIM and RIM instructions with the pattern of command byte. [8]

Or

4. (*a*) Draw and explain interrupt structure of 8085 microprocessor. [8]

(*b*) Explain the concept of stack. Discuss in brief various stack operations. [8]

5. (*a*) Explain in detail synchronous and asynchronous data transfer scheme. [8]

(*b*) Draw and explain functional block diagram of 8251. [8]

Or

6. (*a*) Explain interrupt driven data transfer scheme in detail. [8]

(*b*) Explain in detail RS 232 standard used for communication. [8]

SECTION II

7. (*a*) Draw and explain functional block diagram of 8255 PPI. [8]

(*b*) Write a program to set bit PC_3 of 8255 (BSR Mode) and reset the same after time delay. [8]

Or

8. (*a*) Draw and write assembly language program for interfacing of 8 LED's to 8085 microprocessor through 8255 Port A. LED's should be ON and OFF continuously with suitable time delay. Assume Port address of 8255 as 10, 11, 12, 13 for A, B, C, CWR respectively. [8]

(*b*) Draw and explain block diagram of PIT 8254. [8]

9. (*a*) Draw the interfacing diagram of ADC 0808/0809 to 8085 through 8255. Write assembly language program to read data at channel 2 continuously. Store the data to memory locaiton D000H. Assume the address of 8255 as 30, 31, 32 and 33H. [10]

(*b*) With the help of diagram explain the concept of measurement of power factor using 8085 microprocessor. [8]

Or

10. (*a*) Draw and explain with the help of DAC 0808, assembly language program to generate Triangular wave. [9]

(*b*) With the help of diagram explain the concept of measurement of frequency using 8085 microprocessor. [9]

11. (*a*) Explain in detail control of stepper motor (forward direction and reverse direction) using 8085 microprocessor. [8]

(*b*) With the help of a diagram explain the control of DC motor using 8085. [8]

Or

12. (*a*) Explain the temperature measurement application of 8085 microprocessor. [8]

(*b*) With the help of a diagram explain the interfacing of 7 segment display with 8085 microprocessor. [8]