Printed Pages : 4 | 49 | EEC503

(Following Paper ID and Roll No. to be filled in your Answer Book)

Paper ID: 131523 Roll No. | | | | | | | | | |

B.TECH

(SEM. V) THEORY EXAMINATION, 2015-16

MICROPROCESSORS

[Time : 3 hours] **[MaximumMarks : 100]**

Note: The Question Paper contain three Sections.

Section-A

Q. 1. Attempt all parts of the following. All parts carry **equal** marks. Write answer of each part in short. **(2×10=20)**

(a) List the functions of ALE and IO/$\overline{M}$ of 8085 microprocessor.

(b) Calculate the number of memory chips needed to design 8K-Byte memory if the memory chip size is 1024×1.

(c) List the addressing modes of 8085 with example.

(d) Explain what operation is performed by each of the instruction that follows:

(i) STAX B

(ii) LHLD 2000

(e) What is the output at PORT1 when following instructions are executed?

```
        MVI A, 8FH
        ADI 72H
        JC DISPLAY
        OUT PORT1
        HLT
DISPLAY : XRA A
        OUT PORT1
        HLT
```

(f) Write a program using the ADI instruction to add the two hexadecimal numbers 3AH and 48H and to display the answer at the output port-port 1.

(g) Explain the role of two DMA signals in 8085.

(h) Draw the control word format for different modes of 8225.

(i) Explain the role of program Counter in 8085.

(j) Explain the Flag register of 8086 microprocessor.

Section-B

Attempt any **five** of the following : **(5×10=50)**

Q2. Draw and Explain the architecture of 8085.

Q3. Explain Data transfer instructions of 8085 in detail.

Q4. Explain the Interrupts of 8085.

Q5. A set of three packed BCD numbers are stored in memory location starting at XX50H. The seven segment codes of digits 0 to 9 for common cathode LED are stored in memory location starting at XX70H and output buffer is reserved at XX90H.

WAP & two subroutines called UNPAK and LEDCOD to unpack BCD numbers and select an appropriate seven segment code for each digit. The code should be stored in output buffer memory.

Q6. Explain various functions performed by microprocessor.

Q7. Write a program to count continuouly in hexadecimal from FFH to 00H in a system with a 0.5 μ s clock period. Use register C to set a one ms delay between each count and display the no. at one of the output ports.

Q8. WAP to convert the content of 5 memory locations starting from 2000H into ASCII character. Place the result in five memory locations starting from 2200H.

Q9. What do you mean by DMA? Explain its modes.

Section-C

Attempt any **two** questions from this section. **(15×2=30)**

Q10. Draw and explain the architecture of 8086. Also, explain the concept of physical address generation.

Q11. Explain the block diagram of 8259 and also draw a neat interfacing diagram.

Q12. Explain the logic devices for interfacing. Design a microprocessor system for 8085 MPU such that it should contain 4K byte of EPROM and 2K byte of RAM using two 2K byte EPROM and two 1K byte RAM. Draw the complete interfacing diagram.

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