Printed Pages : 2

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EBM-502

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

PAPER ID : **101506**

Roll No. | | | | | | | | | | |

B. Tech.

(SEM. V) (ODD SEM.) THEORY EXAMINATION, 2014-15

MICROPROCESSOR & ITS APPLICATIONS

Time : **2** Hours] [Total Marks : **50**

Note : Attempt all questions. Each question carries equal marks.

1 Attempt any four questions : $3\frac{1}{2} \times 4 = 14$

a Write a program to divide 16 bit Hex number with a 8 bit Hex number. Store the quotient and remainder.

b What is ALE? Where and Why it is used in 8085 microprocessor?

c Why are the program counter and stack pointer 16 bit registers? What is the function of accumulator?

d Explain the direct and immediate addressing modes of 8085 microprocessor .

e Explain the instructions RAL and RRC with examples.

f Draw and explain the timing diagram of memory Read cycle .

2 Attempt any two questions : **2×6=12**

a Explain the architecture of 8086 microprocessor and also explain its register organisation.

b What are the different addressing modes of 8086 microprocessor? And what is the instruction format? Explain with suitable example.

c Explain in detail bus addressing and memory addressing in 8086 microprocessor.

3 Attempt any two questions : **2×6=12**

a Write a delay routine to introduce a delay of 1 sec with 6 MHz Crystal frequency of 8085 microprocessor.

b Explain the different modes of 8255 programmable peripheral interface

c Explain DMA interfacing circuit and write an initialisation program to transfer 256 bytes of data from a peripheral (floppy disk) to memory starting at 2050. After the transfer, the DMA operation should be terminated.

4 Attempt any two questions : **2×6=12**

a Set up the 8253 as a square wave generator with a 1 ms period, if the input frequency to the 8253 is 1 MHz.

b Draw the schematic of interfacing 8259 Interrupt controller. Write the initialisation instructions with 8085 microprocessor to meet the following specifications

i. Interrupt vector address : 2090 H

ii. Call address interval of eight bits

iii. Nested mode.

c Design a 5 minute clock (Timer) using the 8253 and the interrupt technique. Display minutes and seconds.