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Paper Id: 238568 Roll No.

B TECH

(SEM IV) THEORY EXAMINATION 2022-23

MICROPROCESSOR

Time: 3 Hours Total Marks: 100

Note: Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt all questions in brief. 2 x 10 = 20

a. Explain the term microprocessor.

b. Evaluate the role of temporary registers in 8085.

c. How BIU of 8086 generates 20 bit address to access external memory?

d. List the Difference between Memory Mapped and I/O Mapped peripheral interfacing techniques.

e. List the two functions HOLD and HLDA of 8085 microprocessor.

f. Draw flag register of 8085 microprocessor showing the status of each flag at its proper position.

g. What is pipelining in 8086? Explain.

h. Why memory segmentation is done in 8086 microprocessor. Explain its benefit.

i. Explain the operating Mode 0 & Mode 1 of 8254.

j. What is the function of USART?

SECTION B

2. Attempt any three of the following: 10x3=30

a. Draw the functional block diagram of a general microprocessor and explain.

b. Draw and explain the timing diagram for op-code fetch cycle of 8085 microprocessor

c. Explain the memory segmentation of 8086 in details?

d. 16 bytes of data are stored in memory location at 2050H to 205FH. Write a program for 8085 microprocessor to transfer the entire block of data to new memory location starting at 3050H.

e. With the help of block diagram, Describe 8237 DMA controller with its operating modes.

SECTION C

3. Attempt any one part of the following: 10x1=10

a. Explain the various generations of microprocessor.

b. Design a system in absolute decoding method for 8085 such that it contain 8KB of EPROM and 4KB of RAM using two 4KB of EPROM and two 2KB of RAM. Draw the complete interfacing diagram?

4. Attempt any one part of the following: 10x1=10

a. Draw the pin diagram of 8085 Microprocessor and explain.

b. Explain the interrupts available in 8085 Microprocessor. Also write vectored address of all the hardware and software interrupts.

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5. Attempt any one part of the following: 10x1=10

a. Explain the function of EIU and BU in 8086 Microprocessor.

b. Explain the 12 available addressing modes of 8086 Microprocessor.

6. Attempt any one part of the following: 10x1=10

a. Write a program to count from 0 to 9 using delay between each count using register pair. At the count of 9, the counter should reset itself to 0 and repe sequence continuously. Display each count at one of the output ports.

b. List all the Conditional Call and Conditional Jump instructions with its T states machine cycles.

7. Attempt any one part of the following: 10x1=10

a. Draw and explain the block diagram of 8253/54. Also draw its interfacing diagr with 8085 Microprocessors.

b. Explain the architecture of 8255 PPI with neat diagram and explain its BSR and I/O modes.

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