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B.TECH.

THEORY EXAMINATION (SEM–IV) 2016-17

MICROPROCESSOR

Time : 3 Hours ***Max. Marks : 100***

Note : *Be precise in your answer. In case of numerical problem assume data wherever not provided.*

SECTION – A

1. Explain the following: **10 x 2 = 20**

(a) What is Microprocessor? Give the power supply & clock frequency of 8085.

(b) What are the functions of an accumulator?

(c) Define Subroutine.

(d) What is the function of **IO/M'** signal in the 8085?

(e) Calculate the number of memory chips needed to design 128K-Byte memory if the memory chip size is 2048 x 1.

(f) What do you mean by interfacing?

(g) Define CALL & RET instructions.

(h) What is the purpose of segment registers in 8086?

(i) What do you mean by pipelining?

(j) Define the function of instruction queue in 8086?

SECTION – B

2. Attempt any five of the following questions: **5 x 10 = 50**

(a) Draw and explain the timing diagram of memory write cycle.

(b) Draw the Block diagram and explain the operations of 8255 Parallel communication interface.

(c) Explain the Architecture of 8086 microprocessor with neat diagram.

(d) Discuss about the different Address Modes of 8086. Give Example for each type.

(e) Explain the addressing modes of 8085 microprocessor with example.

(f) Draw and explain block diagram of 8085 microprocessor.

(g) Write an assembly language program to divide a 16 bit number by an 8-bit number.

(h) Write a short note on the following:

(i) Assembler Level Program(ASMs)

(ii) Memory Space

SECTION – C

Attempt any two of the following questions: **2 x 15 = 30**

3 Draw and explain internal block diagram of programmable timer counter and it's modes of operation in detail.

4 Discuss internal block diagram of 8237 and explain the operating mode of 8237 DMA controller.

5 Write the program to count from 0 to 9 with a one second delay between each count. At the count of 9, the counter should reset itself to 0 and repeat the sequence continuously. Use register pair HL to set up the delay, and display each count at one of the output ports. Assume clock frequency of the 8085 microprocessor as 1MHz.

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