Code : 031511

B.Tech 5th Semester Exam., 2019

MICROPROCESSORS AND ITS APPLICATIONS

Time : 3 hours *Full Marks* : 70

Instructions :

(i) The marks are indicated in the right-hand margin.

*(ii) There are **NINE** questions in this paper.*

*(iii) Attempt **FIVE** questions in all.*

*(iv) Question No. **1** is compulsory.*

1. Answer any *seven* of the following short answer-type questions : 2×7=14

(a) Write about the basic difference between microprocessor and microcontroller.

(b) Draw and explain the memory and I/O read cycle of 8085.

(c) Define the following :

(i) Nibble

(ii) Word

(Turn Over)

(d) Explain the concept of memory segmentation in 8086 microprocessor.

(e) Why are the lower byte addresses bus (A0–A7) and data bus (D0–D7) multiplexed?

(f) Write basic operations of microprocessor with block diagram.

(g) Compare between Procedure and Macros in assembler directives of 8086.

(h) Define compiler or interpreter in programming languages.

(i) How many instructions 8085 can support?

(j) Write about the types of addressing modes in 8086.

2. *(a)* Differentiate between the following : 6

(i) Microprocessor and microcontroller

(ii) Low and high level languages

(iii) RISC processor and CISC processor

(iv) Compiler and interpreter

(b) Explain minimum mode operation of 8086 microprocessor with block diagram. 8

(Continued)

3. (a) Explain evolution of microprocessor with its different generations. 6

(b) Explain the requirement of a program counter, stack pointer and status flags in the architecture of the 8085 microprocessor. 8

4. (a) Define opcode and operand. Specify the opcode and the operand in the instruction MOV H,L. 6

(b) Write a program to add two 16-bit numbers for 8085 μp. 8

5. (a) Explain ALE, HOLD, READY, S0, S1 SIGNALS for 8085 microprocessor. 6

(b) Explain working of 8257 DMA controller with the help of a functional block diagram. 8

6. (a) Write the instruction to display the contents of stack pointer register at output ports. 6

(b) Explain the following : 8

(i) 8259 programmable interrupt controller

(ii) Development tools—Editor, Library builder, Linker, Emulator

7. (a) Design a system for 8085 such that it contains 4 KB of EPROM and 2 KB of RAM using two 2 KB of EPROM and two 1KB of RAM. Draw the complete interfacing diagram. 6

(b) Draw the architecture of 8086 and explain its different units. What do you mean by pipelining? 8

8. (a) Draw the block diagram of 8251 USART and explain each block. Also draw its interfacing with 8086. 6

(b) Draw and explain block diagram and pin configuration of IC-8253. 8

9. (a) Explain the concept of memory segmentation. 6

(b) Explain assembler level programming and draw the flowchart of assembler level programming. 8

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