

Roll No. ....

Total Pages : 3

**305403**

**May, 2019**

**B.Tech. IV SEMESTER**

**Microprocessors and Microcontrollers (ECC-03)**

Time : 3 Hours]

[Max. Marks : 75

*Instructions :*

1. *It is compulsory to answer all the questions (1.5 marks each) of Part-A in short.*
2. *Answer any four questions from Part-B in detail.*
3. *Different sub-parts of a question are to be attempted adjacent to each other.*

**PART-A**

1. (a) Explain the difference between RISC & CISC processors. (1.5)  
(b) Describe 8051 flag bits and PSW register. (1.5)  
(c) Specify the bit of control word for 8255 which differentiates between the I/O mode & BSR mode. (1.5)  
(d) Define Arithmetic Coprocessors. (1.5)  
(e) What do you understand by physical address generation in 8086? (1.5)

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- (f) Calculate the no of chips needed to design 8 K byte memory if the memory chip size is 1024x1. (1.5)
- (g) Define the use of MOVX & MOVC instruction in 8051 microcontroller. (1.5)
- (h) When 8086 microprocessor is interfaced to 8253 a programmable interval timer. Then the maximum number by which the clock frequency on one of the timers is divided by \_\_\_\_\_. (1.5)
- (i) Explain what is interrupt latency? How can you reduce it? (1.5)
- (j) Define bit addressable RAM in 8051. (1.5)

### PART-B

- 2. (a) Write a program for division of two BCD no using 8085 processors. (5)
- (b) What do you mean by interrupt? Describe addressing modes of 8086 with examples. (10)
- 3. (a) List out the interrupts available in 8086 Microprocessor. (5)
- (b) Sketch and explain the interface of 8259 to the 8086 Microprocessor in minimum mode. (10)
- 4. Explain the 8255 PPI block diagram. List out the different operating modes of 8255 with control word & status word. (15)

- 5. (a) Describe ARM architecture with neat diagram. (10)
- (b) Write an algorithm for Timer 0 of 8051 microcontroller is to be programmed in model for creating a square wave. (5)
- 6. (a) Draw and explain the block diagram of 8051 microcontroller. (10)
- (b) Write a program for add unsigned numbers found in internal RAM location 20H, 21H, 22H store the result in RAM location 41H (MSB), 40H (LSB) using 8051. (5)
- 7. (a) Explain different types of memory used in Microcontrollers & describe the concept of virtual memory. (10)
- (b) How can you differentiate between PIC & ARM Microcontroller architecture? (5)