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Roll No .....

EC-5003 (CBGS)

B.E. V Semester

Examination, December 2017

Choice Based Grading System (CBGS)

Microprocessor and Microcontroller

Time : Three Hours

Maximum Marks : 70

Note: i) Attempt any five questions.

ii) All questions carry equal marks.

1. a) Draw the block diagram of minimum mode configuration of 8086 based system.
   b) Explain the operation of 8284 clock generator. By what factor does 8284 clock generator divide the crystal oscillator's output frequency.

2. a) Enlist and explain the different addressing modes of 8086 microprocessors. Give necessary examples.
   b) Explain the following 8086 instructions:
      i) MOV mem/reg, data
      ii) LES reg, mem
      iii) ADD mem/reg, data
      iv) PUSH mem/reg

3. a) What is the difference between a closely and loosely coupled system? What are the relative advantages and disadvantages?
   b) Draw and discuss the architecture of 8087.

4. a) Explain the block diagram and function of each block of 8251 USART.
   b) Explain the different modes of operation of 8255.

5. a) Draw and discuss the block diagram of programmable interval timer 8253. What are the basic function of data bus buffer?
   b) What are interrupts? How many types of interrupts are available in 8086?

6. a) Explain how to serve 64 interrupts using 8259 chips. Draw the necessary diagram.
   b) Explain the functional diagram, the organizational and operational features of 8257 DMA controllers.

7. a) Describe and explain the architecture of 8051 microcontroller.
   b) Give an overview of 8051 instruction set.

8. Write short notes on (any three):
   a) Register organization of 8086
   b) ALP tools
   c) Interrupt cycle
   d) Applications of 8051
   e) BIU and EU

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