Paper Code: EC503	**Roll No.**									

B. TECH.
FIFTH SEMESTER EXAMINATION, 2016-2017
MICROPROCESSORS

MAXIMUM MARKS: **100** TOTAL TIME: **3HOURS**

Note: Attempt all questions:

1. **Attempt any FOUR parts.** **5x4=20**
   - **(a)** Draw the architectural diagram of **8085 microprocessor.**
   - **(b)** A seven segment LED with octal latch (having active high enable) is to be interfaced with **8085microprocessor**. Draw the possible interfacing if the **LED array** has multiple port addresses ranging **A8H-ABH**.
   - **(c)** Compare **memory mapped I/O** and **peripheral mapped I/O.**
   - **(d)** Explain addressing modes supported by**8085 microprocessor**.
   - **(e)** How many machine cycles the instruction **STA XXYYH** take? Draw and explain the instruction cycle of following instruction: **200A: MOV A,B**
   - **(f)** Specify the content of register **A**, register **B** and **flags** after the execution of following instruction:
     SUB A
     MOV B,A
     DCR B
     SUI 01H
     ORA B
     CMA
     HLT

2. **Attempt any FOUR parts.** **5x4=20**
   - **(a)** Write down the advantages of **8086** microprocessor over **8085**.
   - **(b)** Draw the architectural diagram of **8086 microprocessor.**
   - **(c)** Explain the concept of **memory banks** in **8086**basedmicrocomputer**.**
   - **(d)** The contents of the following segment registers are as given
     CS = 1111H, DS = 3333H, SS = 2526H.
     IP = 1232HH, SP = 1100H, offset in data segment = 0020H.
     Calculate the corresponding physical addresses for the addressed bytes in (A) **CS** (B) **SS** and (C) **DS.**
   - **(e)** Explain minimum mode signals of **8086 microprocessor.**
   - **(f)** Draw and explain the bus activity of **8086 MPU** during **write** machine cycle.

3. **Attempt any FOUR parts.** **5x4=20**
   - **(a)** Explain indirect addressing modes of **8086 microprocessor.**

(b) What do you mean by **assembler directives**? Explain in brief.
(c) Explain the **labeling** of data using **TASM** assembler directives.
(d) Write a program (in **8086** assembly language) to convert an 8-bit **BCD number** into its equivalent **hexadecimal number**.
(e) Explain the **labeling** of addresses using **MASM** assembler directives.
(f) Write a program (in **8086** assembly language) to find out the average of two **hexadecimal** numbers.

4. Attempt any TWO parts. 10x2=20

(a) Explain various parallel data transfer techniques.
(b) Explain the working of **8254programmable interval timer**. How **8254** is different from **8253?**
(c) Explain **DMA** transfer types and modes.

5. Attempt any TWO parts. 10x2=20

(a) Interface two **128K× 8 SRAM** chips with **8086 microprocessor**.
(b) Explain **8086** interrupts in detail.
(c) Explain the working of **Interrupt controller 8259.**