

Code: EC6T2

**III B.Tech-II Semester–Regular/Supplementary Examinations–  
March 2020**

**MICROPROCESSORS & MICROCONTROLLERS  
(ELECTRONICS & COMMUNICATION ENGINEERING)**

Duration: 3 hours

Max. Marks: 70

**PART – A**

Answer *all* the questions. All questions carry equal marks

11x 2 = 22 M

1.

- a) What is Program Counter register in 8085?
- b) What are the types of machine cycles in 8085?
- c) Explain the following pins of 8086?
  - i) ALE
  - ii) INTR
- d) Differentiate minimum and maximum mode pins?
- e) Write the control word to make Port A as input and in mode 0?
- f) Explain the need for DMA?
- g) What are the special function registers available in 8051?
- h) What is the size of internal RAM and internal ROM available in 8051?
- i) List microcontroller development tools?
- j) What is UART?
- k) Mention the key differences between microprocessors and microcontrollers?

## PART – B

Answer any *THREE* questions. All questions carry equal marks.

3 x 16 = 48 M

2. a) Explain the bus organization of 8085 with neat diagram? 8 M
- b) Draw and explain the pin diagram of 8085? 8 M
3. a) Develop 8086 assembly language program to find the smallest number in a given array? 8 M
- b) Draw the timing diagram in the minimum mode configuration of 8086? 8 M
4. a) Draw and explain the block diagram of 8259 Programmable interrupt controller? 8 M
- b) Interface the 8255 Programmable Peripheral Interface to 8086 and explain its key features? 8 M
5. a) Argue that the microcontroller is suitable for embedded applications rather than microprocessor? List different applications of microcontrollers. 8 M
- b) Explain the addressing modes of 8051 with examples? 8 M
6. a) Explain thumb instruction set with suitable examples? 8 M
- b) Explain UART with relevant diagrams? 8 M