Code No: R1632041 **R16** SET - 1

III B. Tech II Semester Regular/Supplementary Examinations, October/November - 2020

MICROPROCESSORS AND MICROCONTROLLERS

(Common to Electronics and Communication Engineering, Electronics and Computer Engineering)

Time: 3 hours Max. Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B)**
2. Answer **ALL** the question in **Part-A**
3. Answer any **FOUR** Questions from **Part-B**

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PART –A (14 Marks)

1. a) What is the need for the ALE pin in 8086? [2M]
   b) What is the LOCK prefix? [2M]
   c) Give the control word structure of 8255 PPI. [3M]
   d) Differentiate real and protected modes of 80386. [2M]
   e) What are the register banks in 8051? [2M]
   f) Explain about the ADDLW instruction of PIC. [3M]

PART –B (56 Marks)

2. a) Draw and discuss the pin configuration of 8086. [7M]
   b) What is an interrupt vector table of 8086? Explain its structure. [7M]

3. a) What do you mean by addressing modes? Explain the different addressing modes supported by 8086. [7M]
   b) Explain the functions of DB, DT, ENDP, EQU, LENGTH assembler directive. [7M]

4. a) Explain in detail about the DMA controller with a neat diagram. [7M]
   b) Draw a typical stepper motor interface with 8255 and explain its functioning. [7M]

5. a) Draw and discuss the register set of 80386 and explain a typical function of each of the registers in brief. [7M]
   b) Explain segmentation and paging schemes in 80386. [7M]

6. a) Draw and discuss the formats and bit definitions of the following SFR's in 8051 microcontrollers: [7M]
      i) IP ii) TMOD iii) TCON iv) SCON.
   b) Explain programming and interface for an LCD display controller which has two lines and sixteen characters in each line. [7M]

7. a) Draw and explain different timers present in the PIC controller. [7M]
   b) Write a short note on PIC 16F8XX Flash controllers. [7M]

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