III B. Tech II Semester Regular/Supplementary Examinations, August-2021
MICROPROCESSORS AND MICROCONTROLLERS
(Common to Electronics and Communication Engineering, Electronics and Instrumentation 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) Define an interrupt?   [2M]
   b) What is REP prefix?   [2M]
   c) Write any three salient features of mode 2 of 8255.   [3M]
   d) What do you mean by a descriptor table?   [2M]
   e) Define stack pointer.   [2M]
   f) Draw a simple PIC reset circuit.   [3M]

PART –B   (56 Marks)

2. a) What is a microprocessor? What are different types of micro-   [7M]
      processors? Explain the evolution of microprocessors.
   b) With a neat sketch explain the internal architecture of 8086   [7M]
      microprocessor.

3. a) List and explain the different string instructions of 8086.   [7M]
   b) What are assembler directives? List and explain different assembler [7M]
      directives with suitable examples.

4. a) Explain ADC 0809 with neat sketch and explain how can ADC 0809   [7M]
      interfaced with 8086?
   b) Bring out the differences between static and dynamic RAM. Describe [7M]
      the procedure of interfacing static memories with a CPU.

5. a) With a suitable block diagram explain the architecture of an 80486 [7M]
      microprocessor.
   b) Explain the paging mechanism in an 80386 microprocessor. Write   [7M]
      its advantages.

6. a) Describe different types of the data transfer instructions in 8051. [7M]
      Explain the difference between the MOV, MOVC and MOVX
      instructions.
   b) With suitable example, explain how conditional jump instructions   [7M]
      are useful in implementing while and for loops in a program?

7. a) Write down the features of different PIC microcontrollers.   [7M]
   b) Draw the flag register of PIC 16F877 controller and explain the   [7M]
      function of each flag in detail.

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