INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

B.Tech VI Semester End Examinations (Regular), November – 2020

Regulation: IARE–R16

MICROPROCESSORS AND MICROCONTROLLERS

Time: 2 Hours   (ECE)   **Max Marks: 70**

Answer any Four Questions from Part A
Answer any Five Questions from Part B

PART – A

1. Write about the register organization model in 8086 with functional block diagram. **[5M]**

2. Explain the interrupt structure in 8086 with examples. **[5M]**

3. Describe the operation of 8255 PPI for Mode 0. **[5M]**

4. Discuss in brief the various registers in 8051 microcontroller. **[5M]**

5. Explain the following special function registers with examples. i) IE register ii)IP register **[5M]**

6. Describe minimum mode operations of 8086. **[5M]**

7. List the four modes of keyboard operation in 8279. **[5M]**

8. Specify control word of 8255 for BSR mode and explain in detail. **[5M]**

PART – B

9. Explain the function of the following flags in 8086 microprocessor. i) Carry Flag ii Parity flag iii) Zero flag iv) Single-step flag v) Direction flag vi) Overflow flag vii)Interrupt flag **[10M]**

10. Explain the following addressing modes in 8086 with examples.

    i) Immediate

    ii) Direct

    iii) Register indirect

    iv) Register relative **[10M]**

11. Write an assembly language program to find the largest number from an array of 5 numbers. **[10M]**

12. Examine in detail interrupt handling process in 8086 microprocessor. **[10M]**

13. With the help of a diagram explain the different blocks of 8259 programmable interrupt controller. **[10M]**

14. What are the signals a microprocessor should have to support DMA? List and explain the sequence of operations carried out during a DMA operation. **[10M]**

15. List different addressing modes of 8051 microcontroller. Explain each with appropriate examples. **[10M]**

16. Draw the pin diagram of 8051 microcontroller and explain function of each pin in detail. **[10M]**

17. Write a program for the 8051 to transfer letter 'A' serially at 4800- baud rate, 8 bit data, 1 stop bit continuously.

    [10M]

18. Describe about serial communication details of 8051 microcontroller. **[10M]**

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