Question Paper Code : X 10371

B.E./B.Tech. DEGREE EXAMINATIONS, NOV/DEC 2020 AND APRIL/ MAY 2021

Fifth/Sixth Semester

Electronics and Communication Engineering

EC 8691 – MICROPROCESSORS AND MICROCONTROLLERS

(Common to Biomedical Engineering/Computer Science and Engineering/ Computer and Communication Engineering/Medical Electronics/Information Technology)

(Regulations 2017)

Time : Three Hours   Maximum : 100 Marks

Answer ALL questions

PART – A   **(10×2=20 Marks)**

1. Write the flags of 8086.

2. List the types of interrupts in 8086.

3. How clock signal is generated in 8086 ? What is the maximum internal clock frequency of 8086 ?

4. What is the function of MN/MX pin ?

5. What are the signals available for serial communication ?

6. Define conversion time.

7. Write a program to mask the 0th and 7th bit using 8051.

8. Write a program to find the 2's complement using 8051.

9. Define the operating model 0 of 8051 serial ports.

10. Give the different types of ADC.

PART – B   **(5×13=65 Marks)**

11. a) How would you show your understanding of internal hardware architecture of 8086 microprocessor with neat diagram ?

(OR)

    b) What are the various addressing modes of 8086 microprocessor with examples ?

12. a) Draw the pin diagram of 8086 processor and explain all the signals.

(OR)

b) i) Explain in detail about closely coupled configurations. **(6)**

ii) Discuss on loosely coupled configurations in detail. **(7)**

13. a) Draw the block diagram of 8279 and explain the function of each.

(OR)

b) Explain the operation of DMA controller 8237 with neat diagrams.

14. a) With neat sketch explain the architecture of 8051 microcontroller.

(OR)

b) i) Explain the different addressing modes of 8051. **(6)**

ii) List the various instructions available in 8051 microcontroller. **(7)**

15. a) With neat sketch block diagram of interfacing 64KB of External RAM and 64KB of External ROM with the 8051 Microcontroller.

(OR)

b) Draw and explain the ADC interfacing using 8051.

PART – C **(1×15=15 Marks)**

16. a) i) Write an 8086 ALP to find the sum of numbers in an array of 10 elements. **(8)**

ii) Write an 8086 ALP to find the largest number and smallest number in an array. **(7)**

(OR)

b) Examine the effectiveness of the minimum mode and maximum mode of operations in 8086 in detail.

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