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Reg. No. :

Question Paper Code : 90483

B.E./B/Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2022.

Fourth/ Fifth/ Sixth Semester

Computer and Communication Engineering

EC 8691 – MICROPROCESSORS AND MICROCONTROLLERS

Common to: Biomedical Engineering/ Computer Science and Engineering/
Electronics and Communication Engineering/ Medical Electronics/ Artificial
Intelligence and Data Science/ Information Technology

(Regulations 2017)

Time : Three hours   Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. State the interrupt types of 8086.

2. What is the purpose of segment registers in 8086?

3. List the functions of bus interface unit (BIU) in 8086.

4. Write the two modes of operations present in 8086.

5. How are the functional types defined in control word of 8251?

6. Mention the modes used in keyboard display Interface.

7. List the DJNZ instructions of Intel 8051 microcontroller.

8. List the features of 8051 microcontroller.

9. Write the program to implement serial data transfer in 8051.

10. Give the vector address and priority sequence of 8051 interrupts.

PART B — (5 × 13 = 65 marks)

11. (a) List the functional units and describe their functions in BIU and EU of
8086. Explain the function of various flags of 8086 microprocessor.   (13)

Or

(b) Describe in detail with necessary illustrations, the internal Architecture
of Intel 8086 Microprocessor.   (13)

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12. (a) In detail, explain the functions of the 8086 processor in the loosely Coupled Configuration. (13)

Or

(b) Explain the function of unsigned multiplication and Division instructions in 8086 with suitable examples. (13)

13. (a) Elucidate the interrupt process. Differentiate between a maskable and non-maskable interrupt by using examples. (13)

Or

(b) Explain in detail with illustrations, the process of the Direct Memory Access (DMA) and the functions of various elements of the 8237. (13)

14. (a) With necessary examples, discuss the instruction set and the addressing modes of the 8051. (13)

Or

(b) Explain in detail with illustrations and timing diagram the interrupt structure of 8051 microcontroller. (13)

15. (a) Describe in detail with necessary illustrations the internal Architecture of 8051. Also list out the applications of the same. (13)

Or

(b) Explain in detail with necessary illustrations, the various operating modes available for timer in 8051. (13)

PART C — (1 × 15 = 15 marks)

16. (a) With a neat block diagram, explain in detail the Internal Architecture of 8255 and its registers organization. (15)

Or

(b) Explain in detail with block diagram the 8279 Keyboard/ Display Interface and its various modes of operations. (15)

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