

Reg. No. :

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Question Paper Code : 70522

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2023.

Fourth/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/
Artificial Intelligence and Data Science/Information Technology)

(Regulations 2017)

Time : Three hours

Maximum : 100 marks

(Codes/Tables/Charts to be permitted, if any, may be indicated)

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Write briefly about the Assembler directives of 8086.
2. Draw the Flag Register of 8086.
3. Write briefly on the System bus operation of 8086.
4. Differentiate between Processor and Coprocessor.
5. Write briefly how refresh cycle is different from the Memory Read cycle.
6. Write briefly on Static RAM Interfacing.
7. What are the limitations involved in the serial data buffer of 8051?
8. Define Program Status word.
9. What are the operational features of 8051?
10. Draw the format of PCON of 8051.

PART B — (5 × 13 = 65 marks)

11. (a) Explain in detail with appropriate examples the classification of Instruction set in 8086 Microprocessor. (13)

Or

- (b) With neat illustration, explain in detail the Internal Architecture and the function of 8086 Microprocessor. (13)

12. (a) Describe in detail with neat illustrations, the operation of 8086 Microprocessor in the Maximum Mode. (13)

Or

- (b) With neat illustrations, explain the following:

- (i) I/O Programming in 8086 Microprocessor. (6)
(ii) System design using 8086 Microprocessor. (7)

13. (a) Describe in detail the Architecture, Control word formation and the signal description of the Programmable Interrupt controller 8259. (13)

Or

- (b) With neat illustrations, explain the Internal Architecture and the control word generation of DMA Controller 8257. (13)

14. (a) Enumerate in detail with appropriate examples, the classification of Addressing modes of 8051 Microcontroller. (13)

Or

- (b) With neat illustration, explain in detail the Internal Architecture and the function of 8051 Microcontroller. (13)

15. (a) Enumerate in detail with neat illustrations, the memory addressing and I/O addressing of the 8051 Microcontroller. (13)

Or

- (b) Explain in detail with neat illustrations, the Signal description of the Microcontroller 8051 with a Pin out diagram. (13)

PART C — (1 × 15 = 15 marks)

16. Explain in detail with an algorithm and an assembly language program, how the :

- (a) Stepper motor interfaced with 8051. (15)

Or

- (b) Waveform generation with 8051. (15)