Reg. No. : ☐☐☐☐☐☐☐☐☐☐☐☐

Question Paper Code : 80450

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2021.

Fifth Semester

Electronics and Communication Engineering

EC 2304/EC 54 – MICROPROCESSORS AND MICROCONTROLLERS

(Regulations 2008)

(Common to PTEC 2304 – Microprocessors and Micro Controllers for B.E. (Part-Time) Fifth Semester - Electronics and Communication Engineering - Regulations 2009)

Time : Three hours   Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Why is the 8086 memory divided into odd and even banks?

2. What do you mean by segment override prefix?

3. What are the 8086 instructions used for BCD arithmetic?

4. What are the contents of AL and CY after the execution of the following segment?

    MOV BL, D5H

    RCL BL, 3

    MOV AL, BL

5. What is the various programmed data transfer method?

6. Give the different types of command words used in 8259A.

7. How do you place a specific value in the DPTR register?

8. Which of the 8051 ports need pull-up registers to functions as an I/O port?

9. What is meant by I²C standard?

10. What are precautions required while interfacing microprocessor with motors?

PART B — (5 × 16 = 80 marks)

11. (a) (i) The data transfer rate of I/O device 'A' is considerably less than that of the microprocessor. Draw a flowchart of data transfer operation to be used. (8)

    (ii) Describe the functions of execution unit and bus interface unit. (8)

Or

    (b) Explain the following:
    (i) Maximum mode in 8086 (8)
    (ii) Interrupt processing. (8)

12. (a) (i) Explain the various assembler directives with suitable examples. (8)

    (ii) Write an 8086 ALP to arrange the elements in an array of 10 elements in ascending order. (8)

Or

    (b) (i) Discuss the data movement and program control instructions of 8086. (10)

    (ii) Write an 8086 ALP to find the sum of numbers in the array of 10 elements. (6)

13. (a) With neat block diagram explain the 8255 programmable Peripheral Interface and its operating modes. (16)

Or

    (b) (i) Draw and explain the block diagram of A to D converter. (8)
    (ii) How the CRT terminal is interfaced with a micro processor? (8)

14. (a) Explain in detail the interfacing of Temperature Controller using 8085 Processor. (16)

Or

    (b) Explain in detail the procedure and the block diagram involved in the Traffic Light Controller using 8085. (16)

15. (a) Develop a microcontroller based traffic light controller and explain its working. (16)

Or

    (b) Explain the working of microprocessor based stepper motor control with suitable circuit diagram. (16)

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