Reg. No. :

Question Paper Code : 70439

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

Fourth/Fifth Semester

Computer Science and Engineering

EC 6504 – MICROPROCESSOR AND MICROCONTROLLER

(Common to Information Technology, Medical Electronics Engineering/Bio Medical Engineering/Electronics and Communication Engineering)

(Regulations 2013)

(Also common to PTEC 6504 – Microprocessor and Microcontroller for B.E. Part Time – Third Semester /Computer Science and Engineering – Fourth Semester – Electronics and Communication Engineering (Regulations 2014))

Time : Three hours   Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1.   List the flags of 8086.

2.   Define stack.

3.   What is the need of LOCK signal?

4.   Write some example for advanced processors.

5.   Give the various modes and applications of 8254 timer.

6.   Draw the block diagram of alarm controller with 8086 as processor.

7.   Mention the number of register banks and their addresses in 8051.

8.   What is the jump range?

9.   List the modes of Timer in 8051.

10. State how baud rate is calculated for serial data transfer in mode 1.

PART B — (5 × 13 = 65 marks)

11. (a) (i) Explain the Data transfer, arithmetic and branch instructions with examples. (6)

    (ii) Write an 8086 ALP to find the sum of numbers in an array of 10 element. (7)

                                    Or

    (b) Define interrupts and their types. Write in detail about interrupt service routine. (13)

12. (a) With neat diagram explain the minimum mode of operation of 8086. (13)

                                    Or

    (b) Define loosely coupled system. Explain the schemes used for establishing priority. (13)

13. (a) Explain in detail about DMA controller. (13)

                                    Or

    (b) Explain the procedure of interfacing D/A and A/D converter circuit. (13)

14. (a) (i) Explain the architecture of 8051 microcontroller with neat diagram. (7)

    (ii) Explain the TMOD function register and its timer modes of operations. (6)

                                    Or

    (b) (i) Explain about Arithmetic and control instruction set in 8051. (8)

    (ii) Write a program to bring in data in serial form and send it out in parallel form using 8051. (5)

15. (a) Illustrate the serial communication in 8051, with its special function register. (13)

                                    Or

    (b) (i) Interface the ADC converter with 8051 and explain with neat diagram. (7)

    (ii) Write the assembly language program to execute the ADC conversion. (6)

PART C — (1 × 15 = 15 marks)

16. (a) (i) Discuss on external memory interface. (7)

    (ii) Critically examine LCD and keyboard interfacing. (8)

Or

(b) (i) Examine the effectiveness of multiprocessor configurations (8)

    (ii) Present a detailed introduction on advanced processors. (7)

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