

18 JUN 2023

Reg. No.

Question Paper Code

11869

B.E. / B.Tech. - DEGREE EXAMINATIONS, APRIL/MAY 2023

Fifth Semester

Instrumentation and Control Engineering

20EIPC502 – MICROPROCESSORS AND MICROCONTROLLERS

(Regulations 2020)

Duration: 3 Hours

Max. Marks: 100

PART - A (10 × 2 = 20 Marks)

Answer ALL Questions

- | | <i>Marks,
K-Level, CO</i> |
|---|-------------------------------|
| 1. List any two examples of one, two and three Byte instructions. | 2,K1,CO1 |
| 2. Differentiate Microprocessor and Microcontrollers. | 2,K2,CO1 |
| 3. What is the function of program counter and stack pointer in 8051? | 2,K1,CO2 |
| 4. List the interrupts of 8051 microcontroller. | 2,K1,CO2 |
| 5. List the features of IC 8253. | 2,K1,CO3 |
| 6. Draw the format of BSR mode word. | 2,K2,CO3 |
| 7. Draw the LCD Interfacing diagram with 8051 MC. | 2,K2,CO4 |
| 8. Explain about key debouncing. | 2,K2,CO4 |
| 9. Draw the block diagram of an embedded system module. | 2,K2,CO5 |
| 10. Explain RISC. | 2,K2,CO5 |

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

11. a) Enumerate briefly about the functional blocks of 8085 microprocessor architecture with a neat sketch. 13,K2,CO1
- OR**
- b) Explain the timing diagram for the instruction STA 5200H. 13,K2,CO1
12. a) Explain the data transfer instruction set of 8051 microcontroller. 13,K2,CO2
- OR**
- b) Draw the pin diagram of 8051 microcontroller and explain the importance of each pin signal available in this processor. 13,K2,CO2
13. a) Explain briefly about the functional blocks of IC 8255 architecture with a neat sketch. 13,K2,CO3

OR

K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create

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b) Explain the Analog to Digital converter in detail. *13,K2,CO3*

14. a) Explain with a neat block diagram and Assembly language program to Interface stepper motor with 8085 microprocessor. *13,K2,CO4*

OR

b) Show how to program and interface LCD to an 8051. *13,K2,CO4*

15. a) Explain the Architecture of 64 bit Microprocessor in detail. Also explain its features and Applications. *13,K2,CO5*

OR

b) With a neat block diagram, explain Embedded system concept. *13,K2,CO5*

PART - C (1 × 15 = 15 Marks)

16. a) Illustrate the control system design of washing machine using 8085 microprocessor programming. *15,K2,CO7*

OR

b) Explain the addressing modes of 80286 16 bit microprocessor in detail. *15,K2,CO5*