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Question Paper Code	12865
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B.E. / B.Tech. - DEGREE EXAMINATIONS, APRIL / MAY 2024

Fifth Semester

Electronics and Instrumentation Engineering

(Common to Instrumentation and Control Engineering)

20EIPC502 – MICROPROCESSOR AND MICROCONTROLLERS

Regulations - 2020

Duration: 3 Hours

Max. Marks: 100

PART - A (10 × 2 = 20 Marks)

Answer ALL Questions

	Marks	K- Level	CO
1. Define stack.	2	K1	CO1
2. List the 16 bit registers of 8085 Microprocessor.	2	K1	CO1
3. Give the memory size of 8051 Microcontroller.	2	K1	CO2
4. How many ports are bit addressable in 8051 Microcontroller?	2	K1	CO2
5. What is key de bouncing?	2	K1	CO3
6. Name the various modes of 8254 timer.	2	K1	CO3
7. Mention the applications of 8051 microcontroller.	2	K1	CO4
8. Write an 8051 ALP to toggle P1 for 200 times. Use RAM location 32H to hold the counter value.	2	K2	CO4
9. Mention the basic functional units of a computer.	2	K1	CO5
10. Compare CISC and RISC architectures.	2	K2	CO5

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

11. a) With the help of neat diagram, explain the architecture of 8085 Microprocessor in detail. 13 K2 CO1

OR

b) Outline in detail about the multiple interrupts and priorities of 8085 microprocessor. 13 K2 CO1

12. a) Examine the architectural features of 8051 microcontroller with necessary diagram. 13 K2 CO2

OR

b) Categorize the types of 8051 instruction set and explain in detail. 13 K2 CO2

13. a) Illustrate in detail about the working of IC 8279 key board/Display controller with neat block diagram. 13 K2 CO3

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

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OR

b) Construct the block diagram and explain the operations of IC 8255 Programmable Peripheral Interface. 13 K2 CO3

14. a) Analyze in detail about the interfacing of 4X4 matrix keyboard and display using 8051 microcontroller. 13 K2 CO4

OR

b) Draw the diagram to interface a stepper motor with 8051 microcontroller and explain. Write its ALP to run the stepper motor in both forward and reverse direction with delay. 13 K2 CO4

15. a) Summarize the important design rules of RISC and CISC philosophy. 13 K2 CO5

OR

b) Explain the architecture of 16 bit Microprocessor with necessary diagram. 13 K2 CO5

PART - C (1 × 15 = 15 Marks)

16. a) Draw a schematic of interfacing a typical washing machine with 8051 Microcontroller and develop an Assembly language program for a washing sequence. 15 K2 CO4

OR

b) Explain the architecture of 32 bit Microprocessor with necessary diagram. 15 K2 CO5