Subject Title: 8051 Microcontroller and Applications Prepared by: K Haritha

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Unit - I: THE MICROCONTROLLER 8051

1. Distinguish between Microprocessor and Microcontroller.
2. Classification of Embedded system.
3. Draw and explain the block diagram of 8051 microcontroller.
4. Write a note on PSW of 8051 microcontroller.
5. Explain the pin diagram of 8051.
6. Discuss different modes of timer.
7. Explain the architecture of 8051 microcontroller in detail.
8. Explain the registers of 8051.
9. Explain the assembler data types and directives used in 8051 microcontroller.
10. Explain I/O port organization in detail.
11. What is meant by Interrupt? Explain the types of interrupts used in 8051 microcontroller.
12. Explain the SFR's related to Timers and Interrupts of 8051 microcontroller.
13. Explain Timers of 8051.

Unit - II: INSTRUCTION SET OF MICROCONTROLLER

14. Explain the addressing modes of 8051 microcontroller.
15. Explain the instruction set of 8051 microcontroller.
16. Explain MOV and MOVX type instructions.
17. Explain LJMP, SJMP and AJMP instructions.
18. Explain PUSH and POP commands.
19. Explain CALL and RET instructions.

Unit - III: PROGRAMMING EXAMPLES OF MICROCONTROLLER 8051 AND TIMER/COUNTER PROGRAMMING IN 8051

20. Write an ALP to add two 16 bit numbers.

21. Write an ALP to multiply two numbers using MUL command.
22. Write an ALP to divide two numbers using DIV command.
23. Write an ALP to add two decimal numbers..
24. Write an ALP to pick largest/smallest among the given set of numbers.
25. Write an ALP to arrange the given array of numbers in ascending/descending order.
26. Write an ALP to access specific port terminal.
27. Write an ALP to generate wave pulses.

Unit - IV: SERIAL COMMUNICATIONS AND APPLICATIONS OF MICROCONTROLLER

28. Write a note on modes of serial I/O port.
29. Write a note on RS 232.
30. Explain about the basics of serial communication.
31. Explain the SFR's related to serial communication.
32. Explain the types of serial data communication.
33. Explain about the interfacing of a keyboard to 8051 microcontroller.
34. Explain about the interfacing of a temperature sensor to 8051microcontroller.
35. Explain about the interfacing of a keyboard to 8051 microcontroller.
36. Explain how information is displayed on LCD and how its interfacing to 8051 microcontroller.
37. Explain about the interfacing of DAC 0808 to 8051 microcontroller.
38. Explain about the interfacing of ADC 0804 to 8051 microcontroller.