EEM43 Digital Electronics & Microcontroller

754

REG. NO

OCTOBER 2021

Time: Three hours

Maximum Marks: 75

Note:
1. Answer ALL the questions in PART-A (1 mark each)
2. Answer any ONE question from each unit in PART-B (3 marks each)
3. Answer any ONE question from each unit in PART-C (10 marks each)
4. The question paper contains TWO Pages

PART-A (1x10=10)

1. Find 2's complement of 1100110.
2. Define even parity.
3. List the various types of flipflop.
4. What is Counter?
5. Define flash memory.
6. Define fan out.
7. Mention the capacity of internal RAM and internal ROM in 8051.
8. State the criteria for choosing a microcontroller.
9. What is overflow flag?
10. What is the use of call instruction?

PART-B (3x5=15)

UNIT-I

11. Convert $(25B)_H$ to its octal equivalent.
12. State and prove Demorgan's theorem.

UNIT-II

13. Differentiate synchronous and asynchronous counter.
14. Construct D and T flip flop.

UNIT-III

15. List the types of memory.
16. Compare TTL and CMOS logic.

UNIT-IV

17. Draw the PSW register format.
18. Compare microprocessor and microcontroller.

UNIT-V

19. Differentiate Rotate and Swap instruction.
20. What is meant by MOVX instruction.

PART-C (10x5=50)

UNIT-I

21. Realize the logic gates using NAND gate.
22. What is multiplexer? Explain the operation of 8 to 1 multiplexer.

UNIT-II

23. Explain the operation of 4 bit binary ripple up counter with waveforms.
24. Explain the working of a shift register in serial-in parallel-out mode with neat diagrams.

UNIT-III

25. Explain briefly about static and dynamic RAM.
26. Explain Hard disk.

UNIT-IV

27. Draw the architecture of 8051 and briefly explain.
28. Explain the register bank in internal RAM memory of 8051.

UNIT-V

29. Explain the addressing modes in 8051 with examples.
30. Classify the 8051 instructions based on their functions. Explain them with examples.

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