ST. FRANCIS DE SALES COLLEGE

A FRANSALIAN INSTITUTE OF HIGHER EDUCATION AUTONOMOUS

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END SEMESTER EXAMINATION – DECEMBER 2024

COMPUTER SCIENCE – I SEMESTER BCA

24BCA15 - COMPUTER ARCHITECTURE

Time: 3 Hours **Max. Marks: 80**

Instruction: *Answer should be written completely in English*

SECTION – A

Answer any **FIVE** questions. Each question carries **TWO** marks. **(5 X 2 = 10)**

1. Convert the binary number 101101 to octal number.
2. Define ASCII and EBCDIC with bits.
3. Difference between combinational and sequential circuits.
4. What is mean by Multiplexer?
5. What are the different types of computer registers?
6. What are the types of instructions?
7. Define JMP, JNC, JC, JP, JNZ, and JM.
8. List out the disadvantages of addressing modes in 8085.

SECTION -B

Answer any **SIX** questions. Each question carries **FIVE** marks. **(6 X 5 = 30)**

9. Describe laws of Boolean algebra with example.
10. Binary operations 11001+111,111-1000, 1010*101, 101101 / 110.
11. Explain in detail about 4 –bit-register with parallel load.
12. Draw block diagram, truth table and logic diagram for 3-8 decoders.
13. Discuss about three types of instruction formats.
14. Write the differences between RISC and CISC.
15. Construct pin configuration for 8085.
16. Construct a neat flow chart for instruction cycle and explain each step.

SECTION – C

Answer any **FIVE** questions. Each question carries **EIGHT** marks. **(5 X 8 = 40)**

17. a) Simplify the Boolean expression $F(A, B, C, D)=\sum(0,2,4,6,7,8,10,13,15)$ (4)

    b) Illustrate Map Simplification in detail. (4)

18. Explain in detail about logic diagram, truth table and functions SR, JK Flip-flop. (8)

19. Compare the working principles of half adder and full adder. (8)

20. Explain all addressing modes in 8085 with example. (8)

21. Build a neat architecture diagram for 8085 with explanation. (8)

22. Explain working of all logic gates with neat diagram. (8)