NOVEMBER 2019 **51301/SAU1A**

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer any TEN questions.

1. What are the components of computer systems?
2. What is meant by generation in computer terminology?
3. Write the first 20 numbers in hexadecimal number system.
4. Convert binary number 100110 into its octal equivalent in shortcut way.
5. Why complementing a number is needed?
6. What is meant by two variable map?
7. Write the use of Don't care conditions.
8. Define tabulation method.
9. What is sequential circuit?
10. What is the use of shift registers?
11. Write any two characteristics of flip flop.
12. What is decoder?

SECTION B — (5 × 5 = 25 marks)

Answer any FIVE questions.

13. Describe the classification of computers.
14. Write short notes on functions of an operating system.
15. Construct truth tables for three input NOR and NAND gates.
16. List any five Boolean Algebra functions.
17. Simplify the expression

    Y = AB'D + AB'D' + A'B'D' + ABD
18. Differentiate between half adder and full adder.
19. Discuss about Programmable Logical Array.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

20. List and explain input and output devices of computer.
21. Discuss Binary codes in detail.
22. Simplify the following Boolean expression F(A, B, C, D) = ABC + BCD + ABCD + ABC using Karnaugh map.
23. Explain the different types of flip flop.
24. Write the functioning of 4 × 1 multiplexer and 3 × 8 decoder with block diagram and truth table.



I BCA - Fundamentals of Digital Computers