
General Instruction:

- (a). Make sure to follow a sequence while writing.
 - (b). Paper is divided into three sections i.e. A, B and C
 - (c). Section A contains VERY Short Answer Type questions of 5 marks
 - (d). Section B contains Short Answer Type Questions of 10 marks with internal choices
 - (e). Section C contains Long Answer Type Questions of 10 marks
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SECTION A (VERY SHORT ANSWER TYPE)-5 MARKS

Q1. A disk defragmenter is an example of 1

- | | |
|--------------------------|---------------------|
| (a) Application Software | (b) System Software |
| (c) Utility Program | (d) None of these |

Q2. 1

- | | |
|--------------|--------------|
| (a) Software | (b) Hardware |
| (c) ALU | (d) CPU |

The physical components of a computer are called

Q3. 1

- | | |
|-------|--------|
| (a) 1 | (b) A |
| (c) 0 | (d) A' |

According to Boolean laws: $A.1 = ?$

Q4 and 5 are ASSERTION AND REASONING based questions. Mark the correct choice as

- A) Both A and R are true and R is the correct explanation for A
- B) Both A and R are true and R is not the correct explanation for A
- C) A is True but R is False
- D) A is false but R is True

Q4. Assertion: An operating system is a system software. 1

Reasoning: The Software that controls internal computer operation, is called system software.

Q5. Assertion: Complementarity law deals with addition and multiplication of a complement with its original Boolean variable. 1

Reasoning: DeMorgan's Theorem also deals with complementation and is the same as complementarity law.

SECTION B (SHORT ANSWER TYPE QUESTIONS)- 10 MARKS

Q6. What is the difference between Interpreter and Compiler? 2

OR

What is difference between RAM and ROM?

Q7. (i) Design logic circuit diagram to realize the Boolean expression $X.Y+X'Y'$ 2

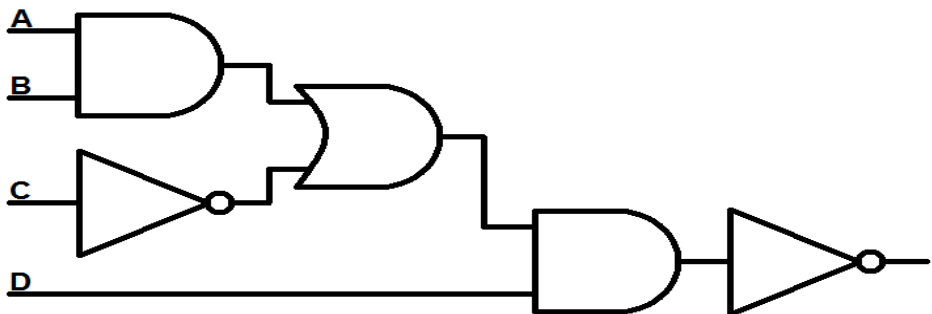
(ii) Find the dual of the Boolean Expression $B+A'C+B'A$

Q8. What is meant by tautology and fallacy? Prove that $1+Y$ is a tautology and $0.Y$ is a fallacy. 2

OR

Prove the idempotent law of Boolean algebra with the help of truth table.

Q9. What function is implemented by the circuit shown in the below figure. 2



OR

Draw the logic circuit diagram for expression: $AB'+B'C'+ABC$

Q10. Distinguish between internal memory and external memory. 2

SECTION C (LONG ANSWER TYPE QUESTIONS)- 10 MARKS

Q11. Briefly explain the basic architecture of computer system. 4

Q12. (i) Given the Boolean Function $(ZX+Y')(XY+Z')$ 3

a. Draw Truth table of the function.

b. Draw logic circuit diagram.

(ii) Find the complement of Boolean expression 3

a. $A'D+C'D+A'B$

b. $XY'Z+X'Y'Z$