

Question bank for B Sc (MPCs, MECs, MSCs) II Year- 3rd semester-

Subject: SEC- Boolean algebra

UNIT- I (Introduction to number systems, conversion and Boolean Algebra)

Short Answer Type

1. List different types of number systems.
2. Conversion of one number system to other number system.
3. Subtraction using 2's complement.
4. List the Boolean algebra postulates.
5. State Demorgan's theorem.
6. Write a short note on Boolean algebra.
7. Simplification of Boolean expressions.
8. List Boolean algebra theorems

Essay Answer Type

1. Explain decimal, binary, octal and hexadecimal number systems.
2. Explain binary addition, subtraction, multiplication and division with examples.
3. State and prove all Boolean laws.
4. Write in detail about Boolean expressions.
5. Proving an expression using truth table.
6. How to complement a given Boolean expression. Explain with an example.

UNIT- II (Boolean algebra, applications of Boolean algebra, Minterm and Maxterm expansion)

Short Answer Type

1. What is the need of multiplying out and factoring expressions?
2. What are the minterms and maxterms?
3. What is a combinational circuit?

4. Write a note on half adder.
5. List out the steps required to design logic circuit from a sentence.

Essay Answer Type

1. State and prove theorems of multiplying out and expressions.
2. Explain EX-OR and equivalence operation with truth table and logic diagram.
3. State and prove consensus theorem.
4. Discuss the methods to prove the validity of the equation.
5. Explain how English sentences are converted into Boolean equations for designing logic Circuit with the help of an example.
6. Draw and explain the operation of full adder circuit with truth table and construct full adder using two half adders.
7. Define minterm and maxterm and represent their values using three variables.
8. Explain the working of 4- bit parallel adder circuit using full adders.
9. Explain the operation of carry look-a-head adder.

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