

DCS QUESTION SET 1

- Ques1: Design EXOR gate with minimum number of NAND gates?
- Ques 2: Show that positive logic NAND gate is negative logic NOR gate?
- Ques 3: For a gate with N inputs, how many combinations of inputs are possible? State general rules to obtain the possible combination?
- Ques 4: Implement the following expression in AOI logic and then convert them into
a) NAND logic b) NOR logic
(1) $(A + \overline{B}C) + D$
(2) $A + B + \overline{C} \overline{D}$
- Ques 5: If one of the inputs to an OR gate is permanently kept 'high' what would be the shape of the output waveform when the remaining inputs are applied?
- Ques 6: Show that $A B + A \overline{B} C + B \overline{C} = A C + B \overline{C}$
- Ques 7: Distinguish between positive logic and negative logic.
- Ques8: Explain De-Morgan's Law.
- Ques 9: Simplify logic function using Q – M minimization technique
 $Y(A, B, C, D) = \sum m(0, 1, 3, 7, 8, 9, 11, 15)$
- Ques 10: Simplify the Boolean expression using four variables:
 $w'z + xz + x'y + wx'z$
- Ques 11: Simplify the following Boolean expression using Don't Care in
a) SOP form
b) POS form
(1) $F(A, B, C, D) = \sum(0, 6, 8, 13, 14)$
(2) $d(A, B, C, D) = \sum(2, 4, 10)$
- Ques 12: Simplify the Boolean expression:
a) $F(A, B, C, D) = \Pi(1, 5, 4, 7, 12, 14)$
b) $F(A, B, C, D) = \Pi(0, 2, 3, 8)$