



Attempt the following questions.

Nº of Questions: 4 in 1 page(s)
Total Mark: 10

Question 1:

(4 Marks)

Simplify the following expressions to (1) sum-of-products and (2) products-of-sums:

- a) $(A' + B + D')(A' + B' + C')(A' + B' + C)(B' + C + D')$
- b) $BCD' + ABC' + ACD$

Question 2:

(2 Marks)

Draw the multiple-level NOR circuit for the following expression:

$$CD(B + C)A + (BC' + DE')$$

Question 3:

(2 Marks)

Derive the circuits for a three-bit parity generator and four-bit parity checker using an odd parity bit.

Question 4:

(2 Marks)

Show that the dual of the exclusive-OR is also its complement.

Good Luck
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