Year:..... Month:..... Day:.....

Subject:.....

99243022

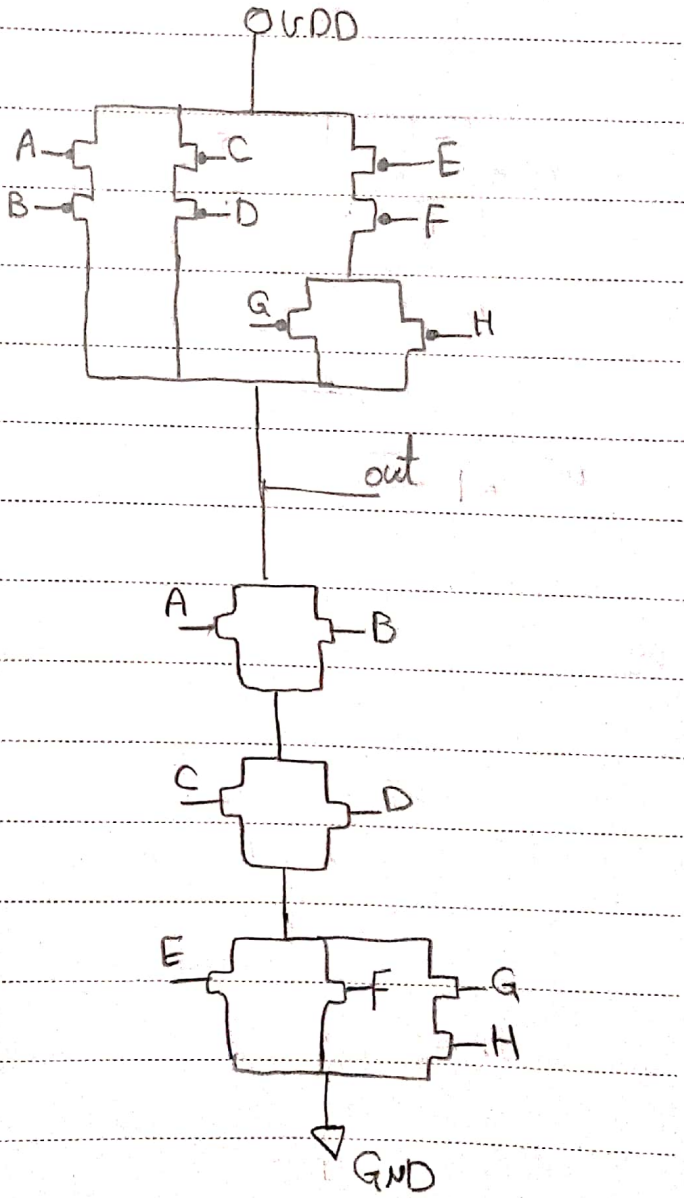
معصومه یاسایی

1)

a) $Y = ((A+B)(C+D)(E+F+GH))'$

$\bar{Y} = \overline{((A+B)(C+D)(E+F+GH))} = (A+B)(C+D)(E+F+GH) \rightarrow$ N-network

$D(\bar{Y}) = (AB)+(CD)+(E.F.(G+H)) \rightarrow$ P-network



16 ترانزیستور

Subject:.....

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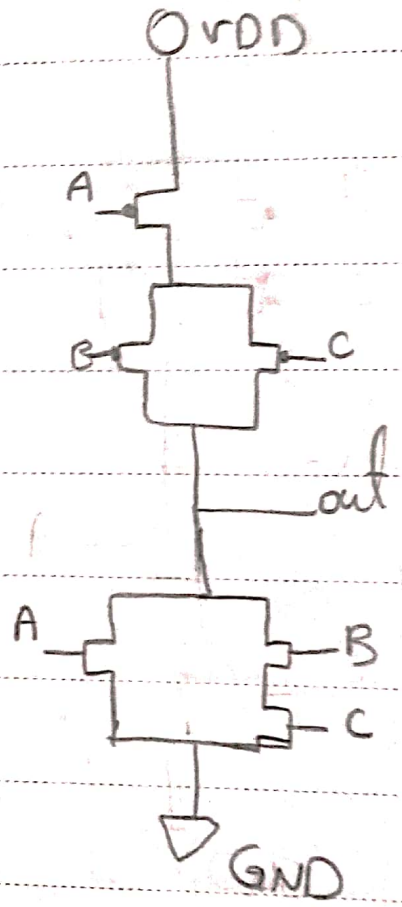
b) $Y = (A+B)' + A'C' \Rightarrow \bar{A}.\bar{B} + \bar{A}\bar{C} \Rightarrow \bar{A}(\bar{B}+\bar{C})$

$\bar{Y} = A.(BC) \longrightarrow$ N_network

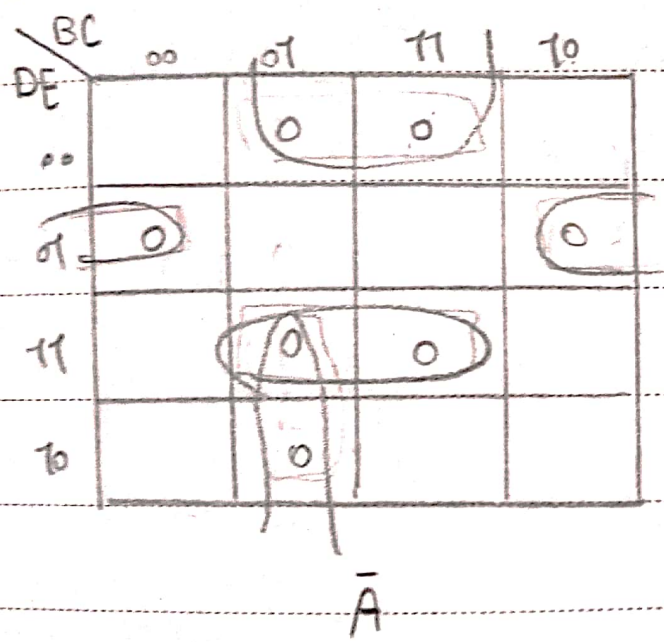
$D(\bar{Y}) = A(B+C) \longrightarrow$ P_network

6 ترانزیستور

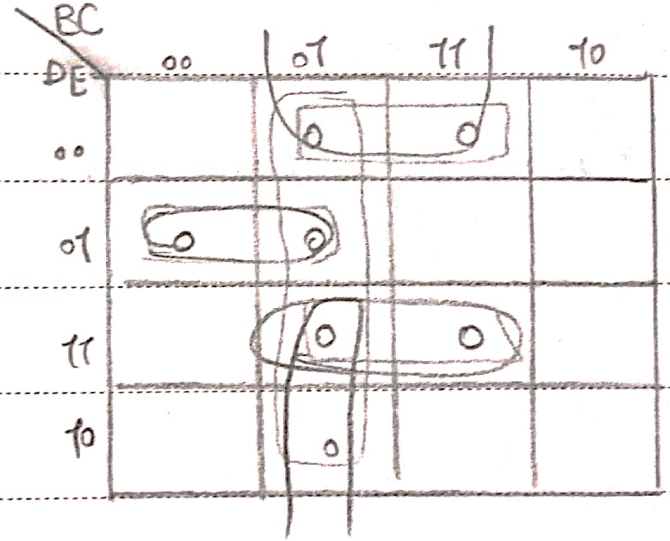


2)

a) $f(A,B,C,D,E) = \Pi_M(1,4,6,7,9,12,15,17,20,21,22,23,28,31)$



$\bar{A}$



A

$$(B+\bar{C}+\bar{D})(D+\bar{E}+C+\bar{A})(D+\bar{E}+B+\bar{A})(\bar{C}+\bar{D}+\bar{E})(\bar{C}+D+E)$$

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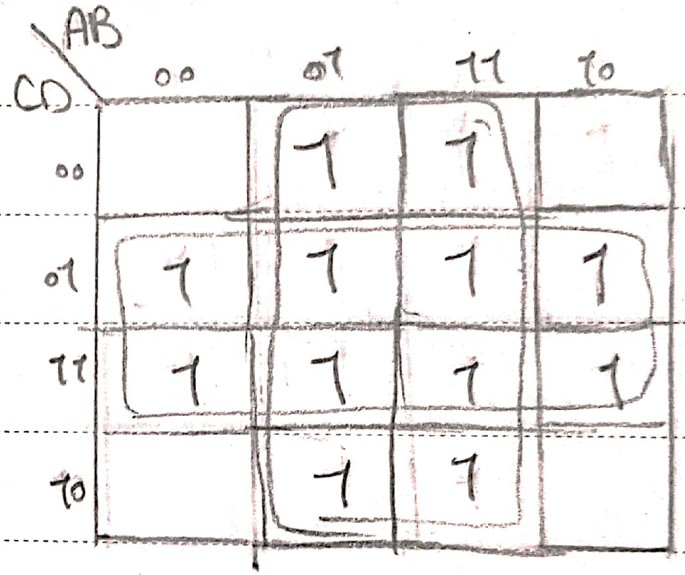
b) $f(A,B,C,D) = \sum_m (1,3,4,5,6,7,9,11,12,13,14,15)$

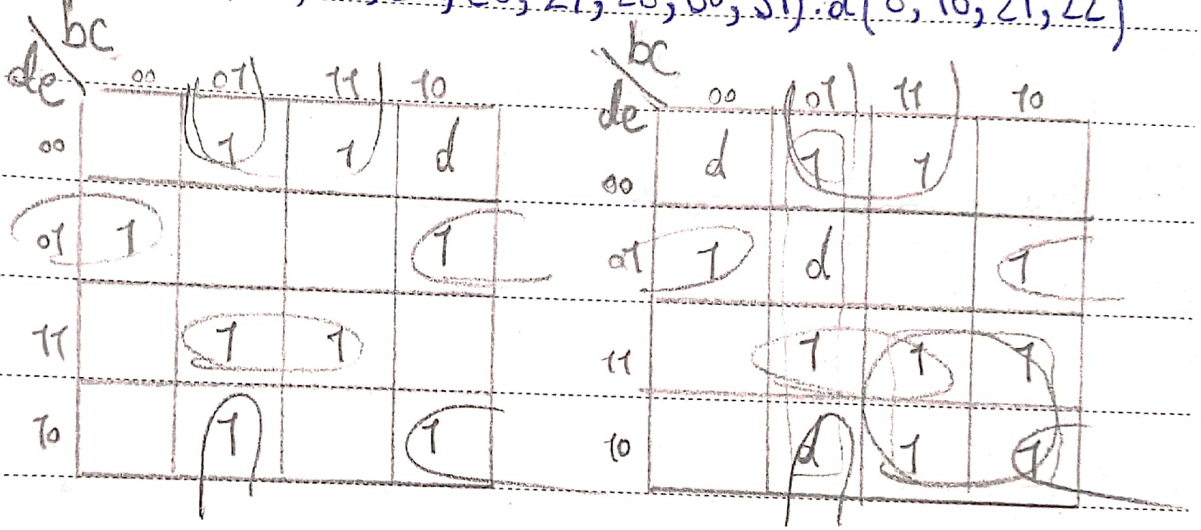


SOP $\Rightarrow B + D$

$= \prod_M (0,2,3,5,11,13,14,18,19,24,29)$

3)

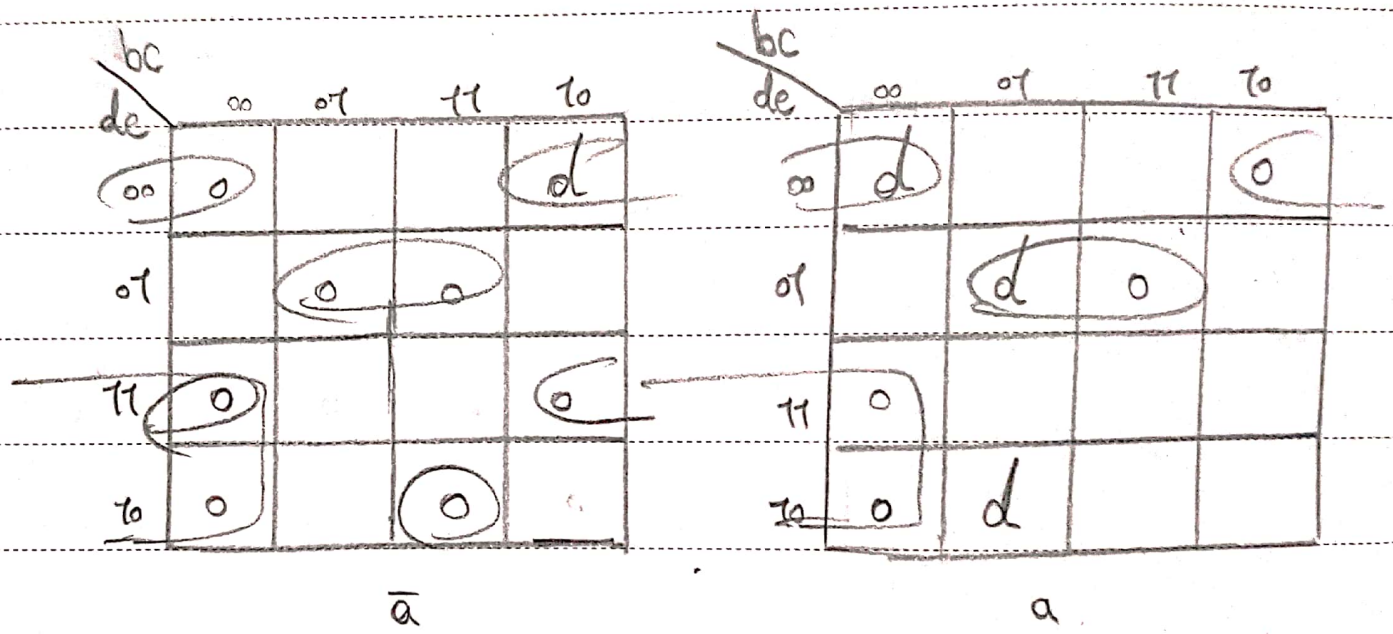
a) $f(a,b,c,d,e) = \sum_m (1,4,6,7,9,10,12,15,17,20,23,25,26,27,28,30,31) . d(8,16,21,22)$



$\bar{a}$ $\qquad$ a

sop $\Rightarrow$ $abd + c\bar{d}\bar{e} + b\bar{c}d\bar{e} + \bar{b}c\bar{e} + \bar{c}\bar{d}e + cde$

$= \prod_M (0,2,3,5,11,13,14,18,19,24,29) \cdot (8,16,21,22)$



POS $\Rightarrow$ $(b+c+\bar{d})(\bar{b}+\bar{c}+\bar{d}+e+a)(a+c+\bar{d}+\bar{e})(c+d+e)(\bar{c}+d+\bar{e})$

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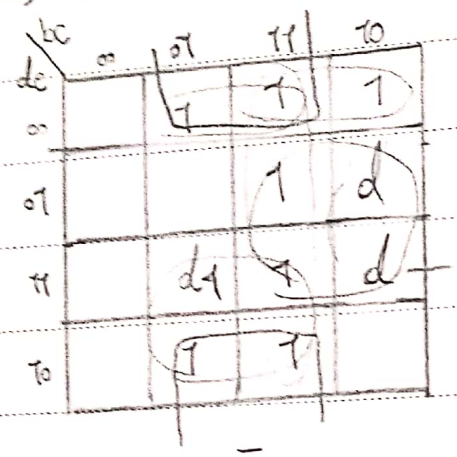
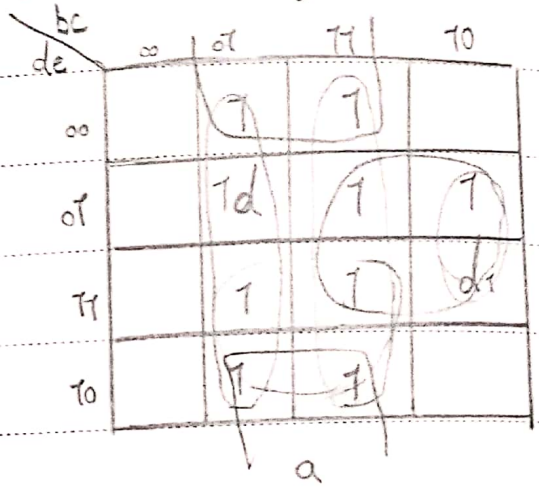
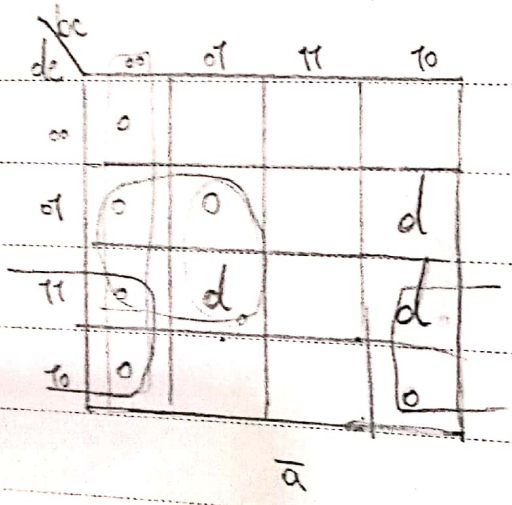
b, $f(a,b,c,d,e) = \Pi_M(0,1,2,3,5,10,16,17,18,19,24,26) \cdot d(7,9,11,21,27)$

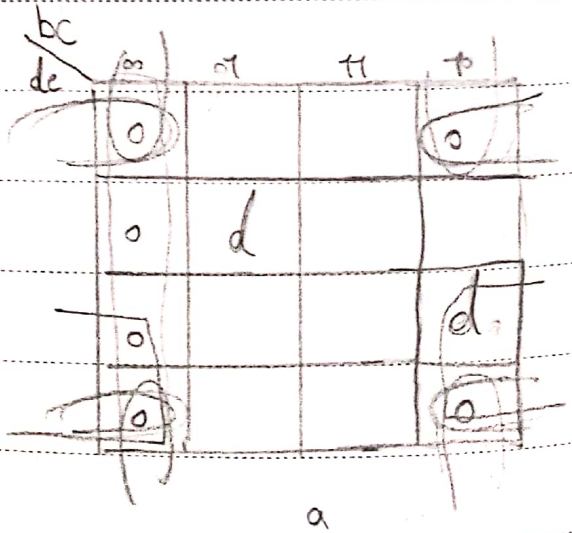
$= \Sigma m(4,6,8,12,13,14,15,20,22,23,25,28,29,30,31) \cdot d(7,9,11,21,27)$





SOP ⇒ $c\bar{e} + be + \bar{A}B\bar{D} + CD$





POS ⇒ $(b+c)(a+b+\bar{e})(\bar{a}+c+e)(c+\bar{d})$