۹۷۳۱۰۱۴ محمد توکلی

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$f_\alpha(A,B,C,D) = AB + BD + A'B'C$

CD \ AB	00	01	11	10
00	0	0	1	0
01	0	1	1	0
11	1	1	1	0
10	1	0	1	0

$f_\beta(A,B,C,D) = A'B + BD'$

CD \ AB	00	01	11	10
00	0	1	1	0
01	0	1	0	0
11	0	1	0	0
10	0	1	1	0

$f_1(A,B,C,D) = f_\alpha \cdot f_\beta = A'BD + ABD'$

CD \ AB	00	01	11	10
00	0	0	1	0
01	0	1	0	0
11	0	1	0	0
10	0	0	1	0

$f_2(A,B,C,D) = f_\alpha + f_\beta = B + A'C$

CD \ AB	00	01	11	10
00	0	1	1	0
01	0	1	1	0
11	1	1	1	0
10	1	1	1	0

$f_3(A,B,C,D) = f_\alpha \oplus f_\beta = A'B'C + A'BD' + ABD$

CD \ AB	00	01	11	10
00	0	1	0	0
01	0	0	1	0
11	1	0	1	0
10	1	1	0	0

۹۷۳۱۰۱۴ محمد توکلی

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CD \ AB	00	01	11	10
00	1	0	0	1
01	0	0	0	0
11	0	0	0	0
10	1	0	0	1

SOP: $B'D'$

ب)

CD \ AB	00	01	11	10
00	1	1	0	1
01	0	1	1	1
11	1	0	0	0
10	1	0	0	1

SOP: $B'D' + A'B'C + A'BC' + BC'D + AB'C'$

پ)

CD \ AB	00	01	11	10
00	1	1	0	0
01	0	0	0	0
11	1	0	0	0
10	1	0	0	1

SOP: $B'CD' + A'B'C + A'C'D'$

ت)

CD \ AB	00	01	11	10
00	1	1	0	1
01	0	1	1	1
11	0	0	0	0
10	1	0	0	1

SOP: $B'CD' + A'C'D' + BC'D + AB'C'$

ث)

CD \ AB	00	01	11	10
00	1	1	0	0
01	0	0	1	0
11	1	0	0	0
10	0	0	0	1

SOP: $(B'+C')(A'+B'+D)(A'+C+D)(A'+B+C)(A+C+D')(A+C'+D)(B+C+D')(A'+C'+D')$

ج)

CD \ AB	00	01	11	10
00	1	1	0	0
01	0	1	1	0
11	1	0	0	0
10	1	0	0	1

SOP: $B'CD' + A'B'C + A'C'D' + BC'D$

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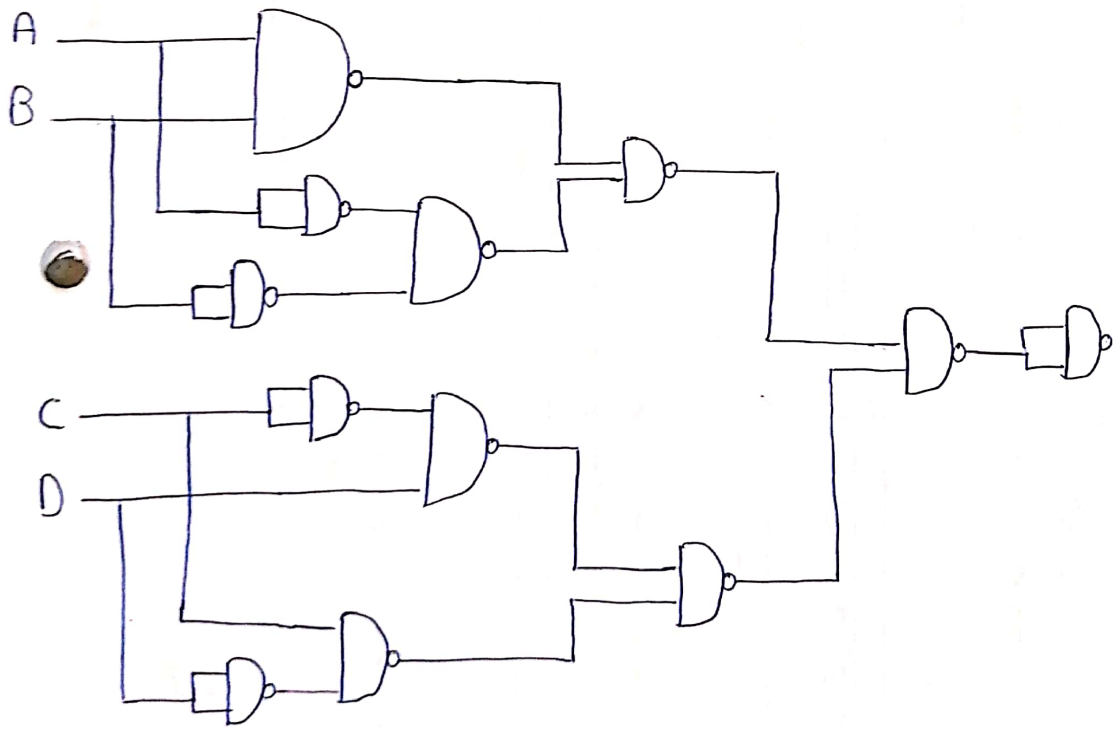

۹۷۳۱۰۱۴ محمد توکلی

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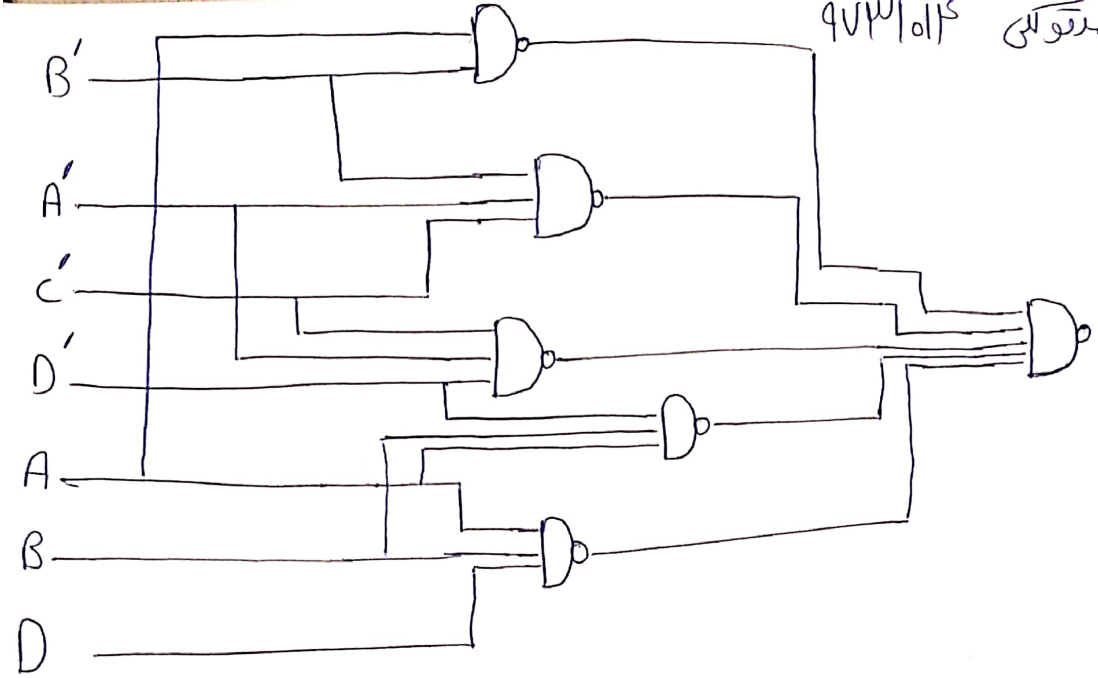

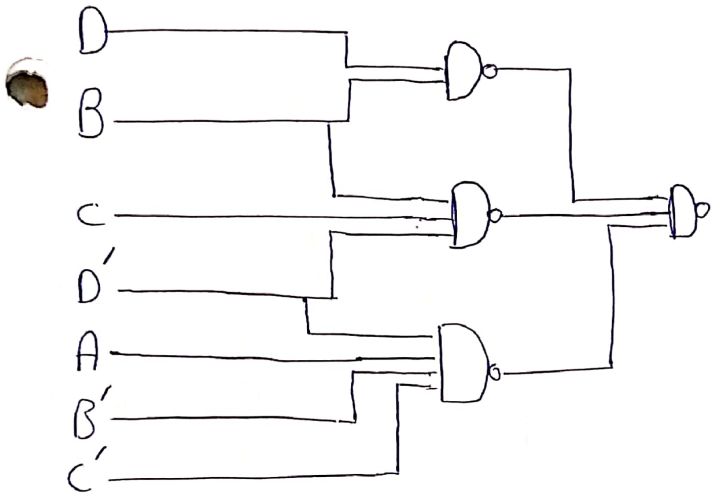

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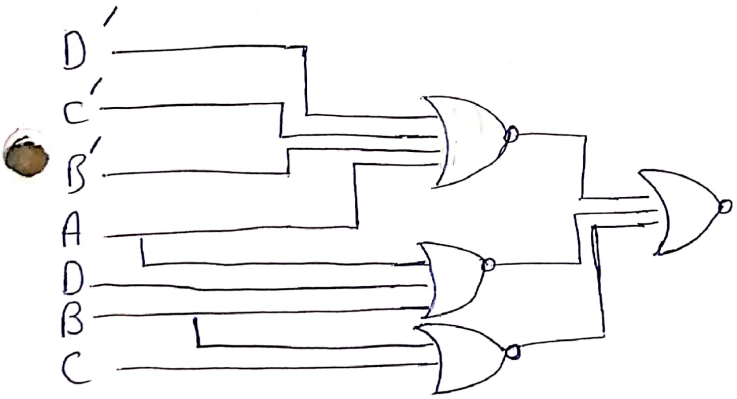
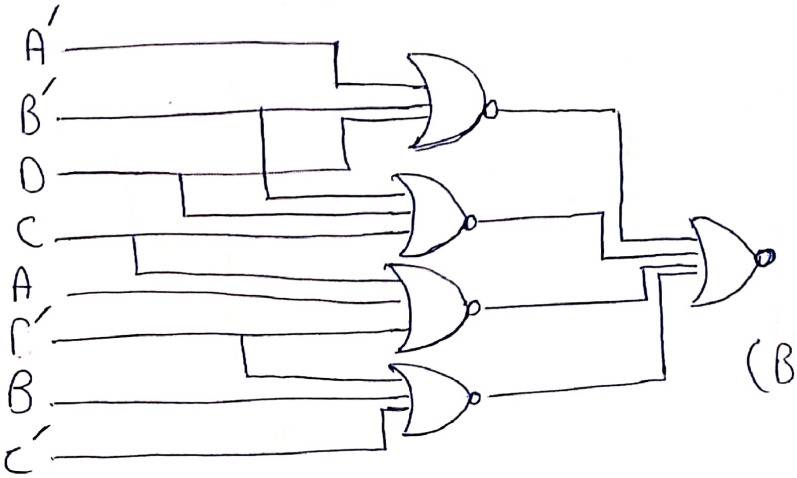


CD \ AB	00	01	11	10
00	1	0	0	1
01	1	0	0	1
11	0	1	0	0
10	1	0	0	0

$B'C' + A'B'D' + A'BCD$



CD \ AB	00	01	11	10
00	1	0	0	1
01	0	0	1	1
11	0	1	1	0
10	1	1	0	1

$(B'+C+D)(A+C+D')(B+C'+D')(A'+B'+D)$

۹۷۳۱۰۱۴ محمد توکلی

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$f(A,B,C,D)=\sum m(0,1,2,3,4,8,9,12)$

CD \ AB	00	01	11	10
00	1	1	1	1
01	1	0	0	1
11	1	0	0	0
10	1	0	0	0

$f=A'B'+B'C'+C'D'$

$f=(B'+D')(A'+C')(B'+C')$

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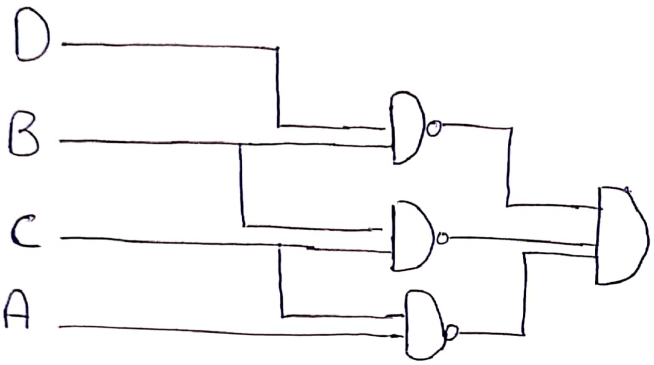

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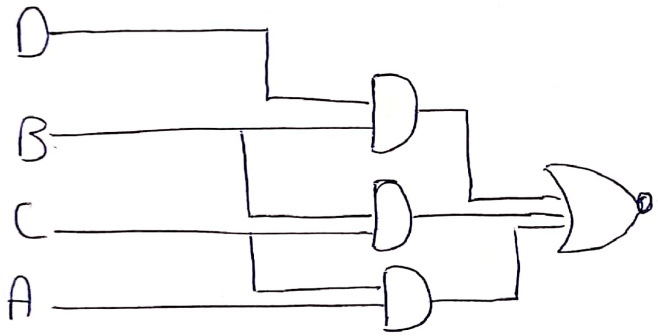

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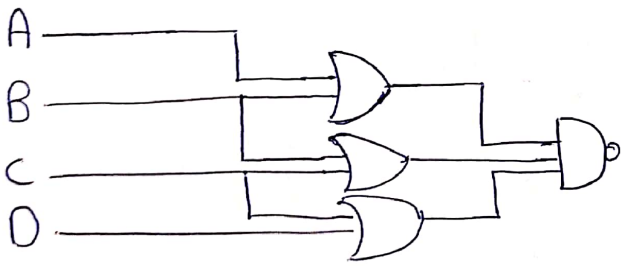

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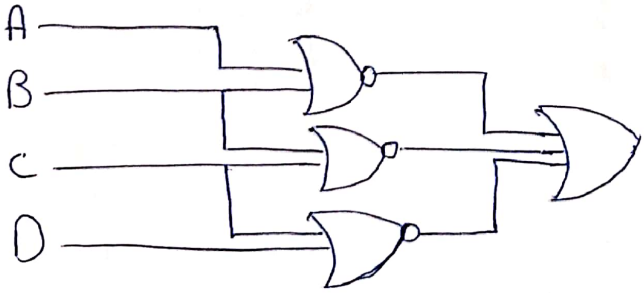
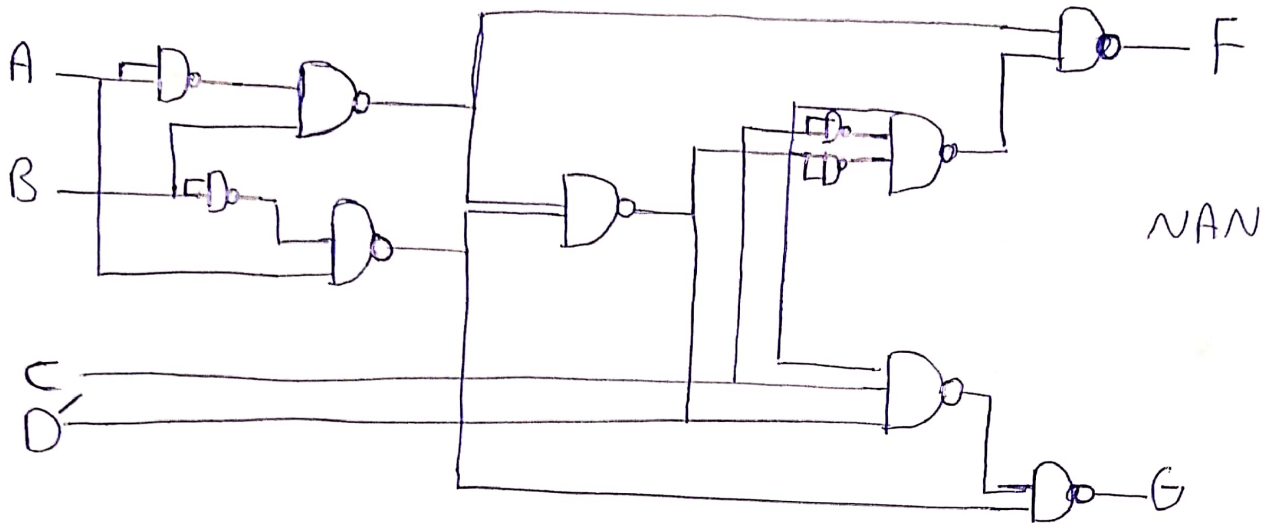
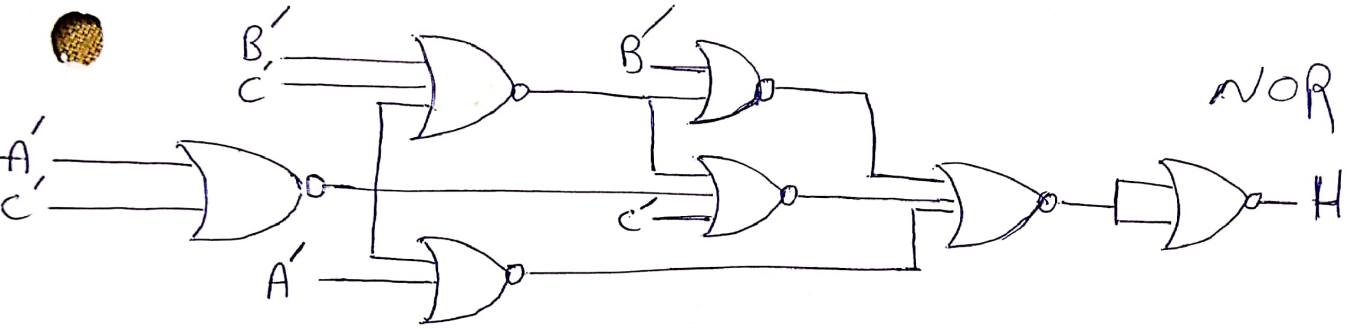


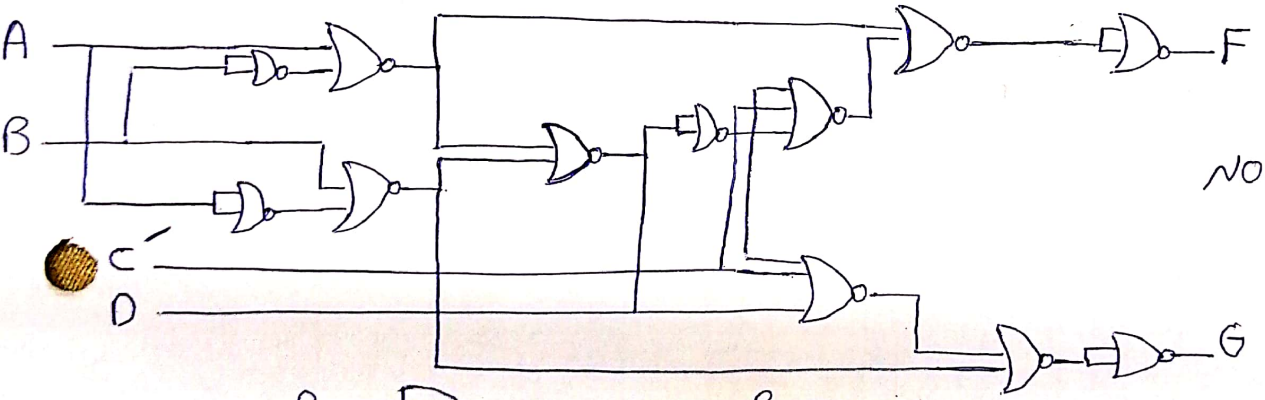
محمد توکلی ۹۷۳۱۰۱۲



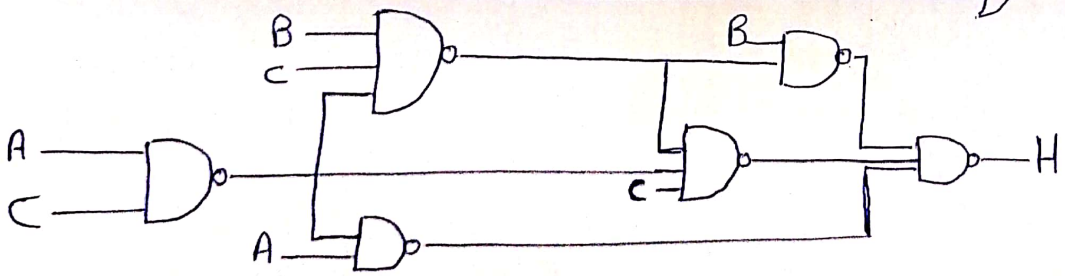
مدار اول – تمام NAND



مدار دوم – تمام NOR



مدار اول – تمام NOR



مدار دوم – تمام NAND