1.17

(1) $F = AB + (\bar{A} + B)(C + D + E)$

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

$F' = (A + B)(\bar{A}B + CDE)$

(3) $F = A \oplus \bar{B} \oplus 1 = A\bar{B} + B\bar{A}$

$\bar{F} = (\bar{A} + B)(\bar{B} + A) = AB + \bar{A}\bar{B} = A \odot B = \bar{A} \odot \bar{B}$

$F' = (A + \bar{B})(B + \bar{A}) = A \odot B$

1.18

(1) 右边 $= (AB + BB + AC + BC)(C + A) = [(A+1)B + AC + BC](C + A)$

$= (B + AC)(C + A)$

$= AB + ACC + AAC + BC = BC + AB + AC + AC$

$= AB + BC + CA =$ 左边

(2) 左边 $= (X\bar{Y} + \bar{X}Y) \oplus Z$

$= (X\bar{Y} + \bar{X}Y)\bar{Z} + \overline{X\bar{Y} + \bar{X}Y} \cdot Z$

$= X\bar{Y}\bar{Z} + \bar{X}Y\bar{Z} + (\bar{X} + Y)(X + \bar{Y})Z$

$= X\bar{Y}\bar{Z} + \bar{X}Y\bar{Z} + \bar{X}\bar{Y}Z + XYZ$

右边 $= X \oplus (\bar{Y}Z + Y\bar{Z}) = \bar{X}(\bar{Y}Z + Y\bar{Z}) + X\overline{\bar{Y}Z + Y\bar{Z}}$

$= \bar{X}(\bar{Y}Z + Y\bar{Z}) + X(\bar{Y} + \bar{Z})(Y + Z)$

$= \bar{X}\bar{Y}Z + \bar{X}Y\bar{Z} + XYZ + X\bar{Y}\bar{Z} =$ 左边

1.20

(1) $F=\overline{(\bar{A}B+A\bar{B}D)(B+CD)}=\overline{\bar{A}B}\cdot\overline{A\bar{B}D}(B+CD)$

$=(\bar{A}+\bar{B})(\bar{A}+\bar{B}+\bar{D})(B+CD)$

$=\bar{A}B\bar{C}\bar{D}+\bar{A}BCD+\bar{A}B\bar{C}D+\bar{A}BCD+A\bar{B}CD+A\bar{B}CD$

$=\sum m^4(3,4,5,6,7,11)$

$=\prod M^4(0,1,2,8,9,10,12,13,14,15)$

(2) $F=(\bar{A}+C)(A+B)(C+\bar{D})=(AC+\bar{A}B+BC)(C+\bar{D})$

$=\bar{A}B\bar{C}\bar{D}+\bar{A}BC\bar{D}+\bar{A}BCD+A\bar{B}C\bar{D}+A\bar{B}CD$

$+AB\bar{C}\bar{D}+ABCD=\sum m^4(4,6,7,10,11,14,15)$

$=\prod M^4(0,1,2,3,5,8,9,12,13)$

(3) $F=(\bar{A}\oplus B)(A\oplus\bar{B})+B\oplus C\oplus D$

$=(\bar{A}\bar{B}+AB)(AB+\bar{A}\bar{B})+(B\bar{C}+\bar{B}C)\oplus D$

$=AB+\bar{A}\bar{B}+(B\bar{C}+\bar{B}C)\bar{D}+D\overline{B\bar{C}+\bar{B}C}$

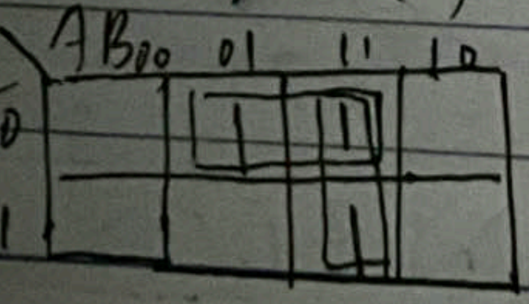
$=\sum m^4(0,1,2,3,4,7,9,10,12,13,14,15)$

$=\prod M^4(5,6,8,11)$

1.22

(2) $F=\sum m^3(2,6,7)$

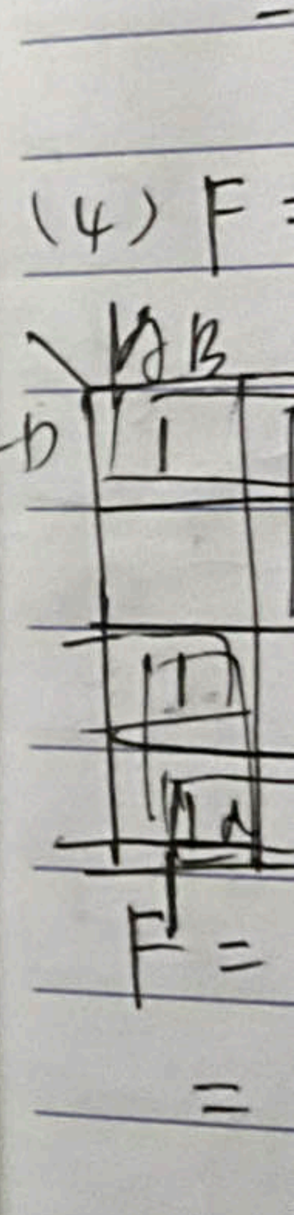
卡诺图：



知 $F=AB+B\bar{C}$

$=B(A+\bar{C})$

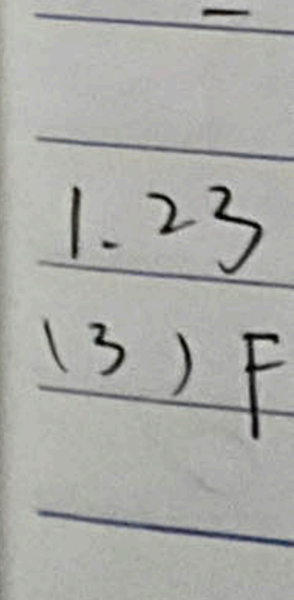
(3) F=



知 F=

=

(4) F

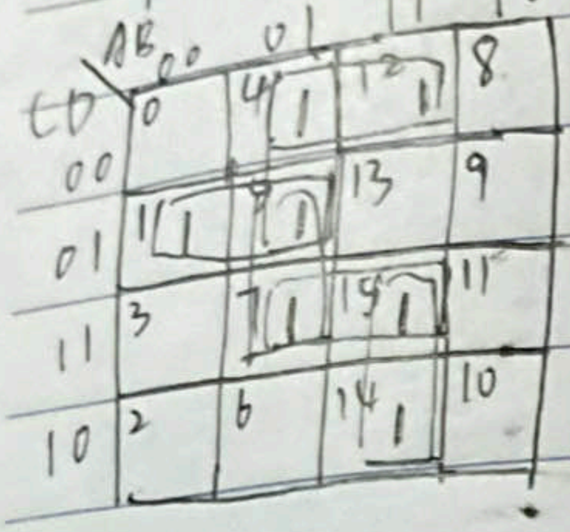


=

1.23

(3) F

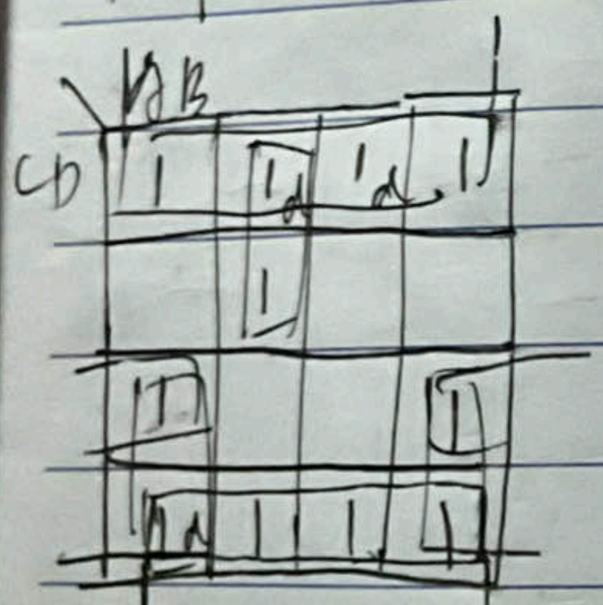
(3) $F=\sum m^4(1,4,5,7,12,14,15)$



$\therefore F=B\bar{C}\bar{D}+\bar{A}\bar{C}D+B\bar{C}D+AB\bar{C}$

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

(4) $F=\sum m^4(0,2,3,4,5,6,8,10,11,12,14)+d(2,4,12)$



$F=\bar{D}+\bar{A}B\bar{C}+\bar{B}C$

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

1.23

(3) $F=\bar{A}\bar{C}+\bar{A}B+\bar{B}\bar{C}=\bar{C}\bar{A}+\bar{C}\bar{B}+B\bar{A}+B\bar{B}$

$=\bar{C}(\bar{A}+\bar{B})+B(\bar{A}+\bar{B})=\bar{C}\overline{AB}+B\overline{AB}$

辑电路

象问题及其解

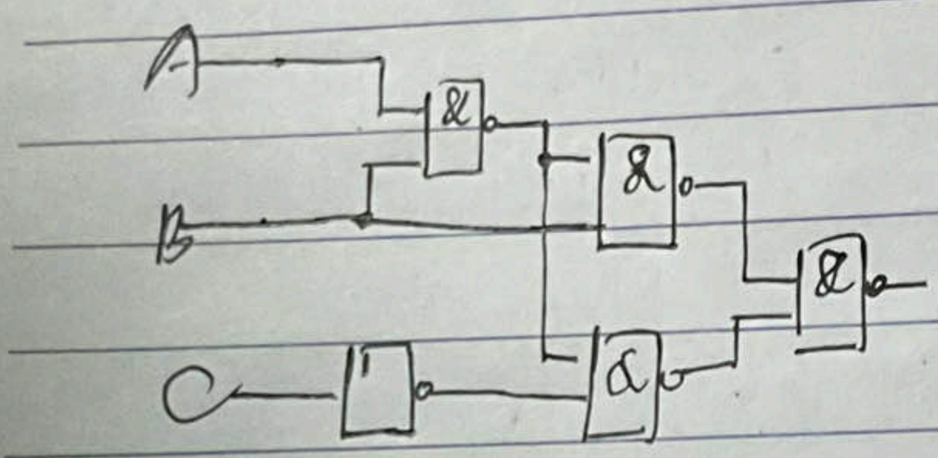
逻辑电路，简称
输入信号，而
输入信号，而
用十分广泛。
然后介绍组合
象问题及其

再将其划分
的规划设计
与设计相反
进行技术交
结构化设计
这些文档要

问的主要
系统的
个简单计

$= \overline{\overline{C}\overline{AB} \cdot B\overline{AB}}$

电路图：

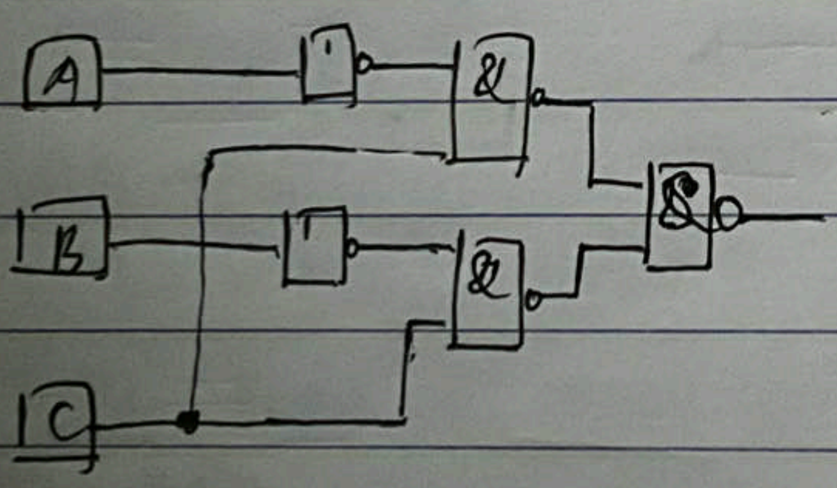


(4) $F = (\bar{A}+\bar{B})(AB+C)$

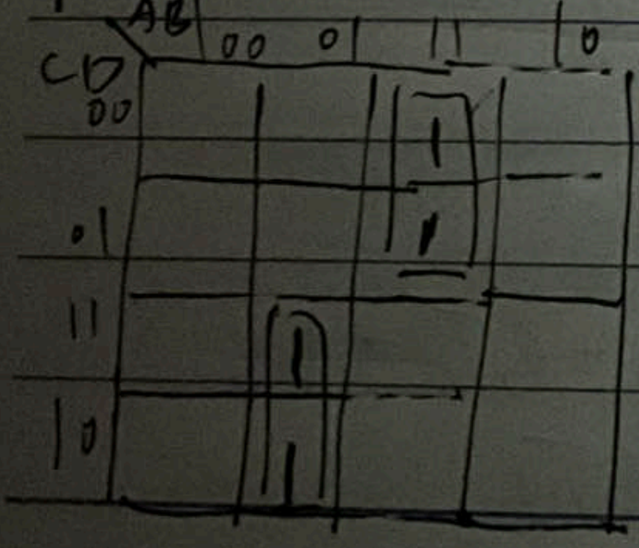
$= \bar{A}C + \bar{B}C$

$= C(\bar{A}+\bar{B}) = \overline{\overline{\bar{A}C} \cdot \overline{\bar{B}C}}$

电路图：



1.24



$F = \bar{A}BC + A\bar{B}\bar{C}$

$= B(A \oplus C)$

$= AB \oplus BC$

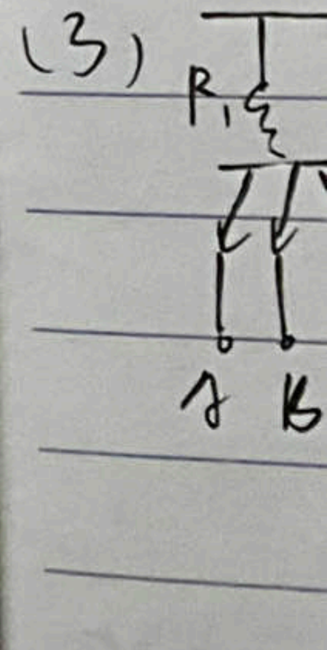
$\diamond X = A,\ X = B,\ Y = B,\ Z = C$

1.25

前2位用
后4位用
00 黑
01 红
10 梅
11 方

1.26

(1)



(3)

1.25

前2位用二进制表示花色

后4位用以表示数字

00 黑桃　A 0001　7 0111　K 1101

01 红心　2 0010　8 1000

10 梅花　3 0011　9 1001

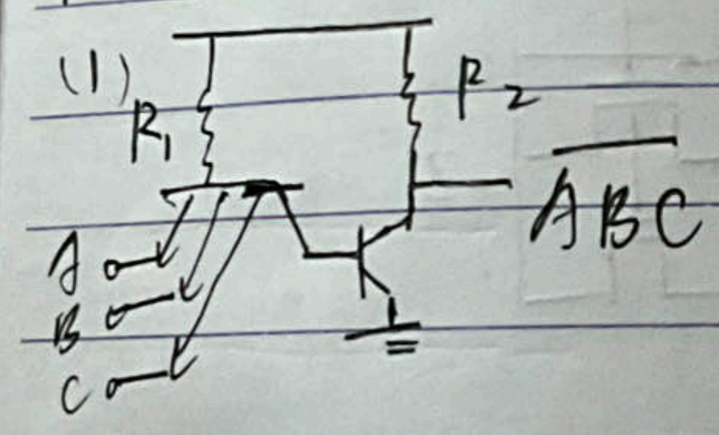
11 方块　4 0100　10 1010

5 0101　J 1011

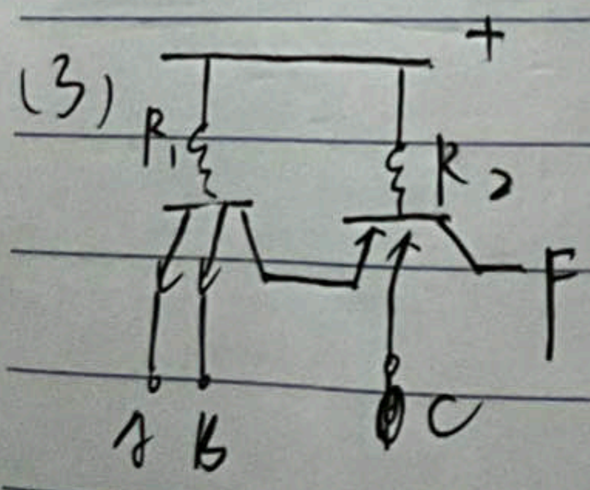
6 0110　Q 1100

1.26

(1)



(3)



争和险象问题及其解决方法
应用

时序逻辑电路，
电路的输入信号
电路的输入信号
的应用十分广
言”：然后介绍
争和险象问题

设计，再将其
下进行的规划
采用与设计
之间进行技
实现结构
与掌握这些

，其间的
表达了系
了一个

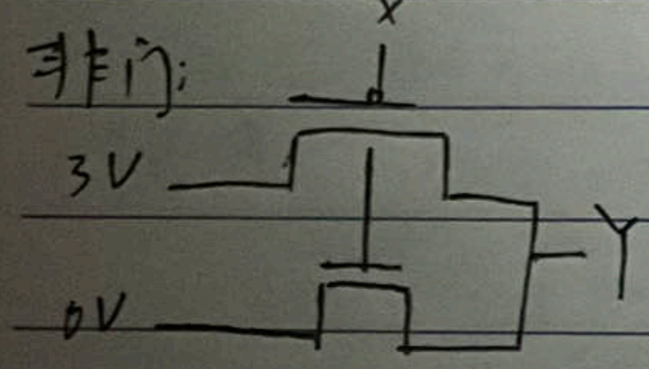
1.28

有极性与前出指与前出调整为上拉支路PM管和下拉支路NM管构成集电极开路门指能如同OTL门一样形成线与结
三态门优点：实现线与、有效减小负载效应、功耗.

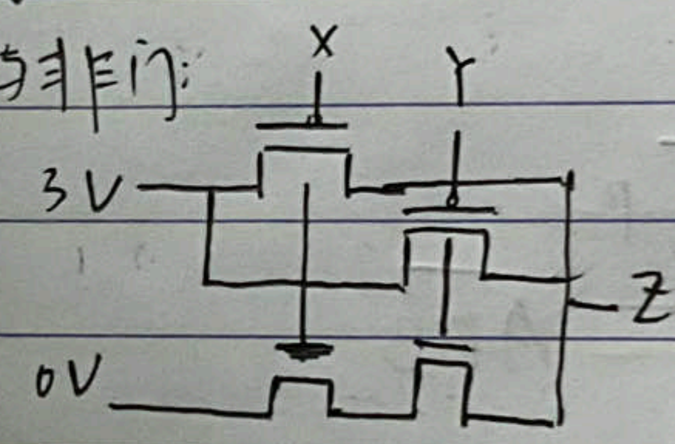
1.29

CMOS由PMOS、NMOS组成. 用互补信号控制
PMOS传送"1"良好，NMOS传送"0"良好
control=1，二者均导通，"1""0"可传送
0，二者均不导通，不传送"1""0"

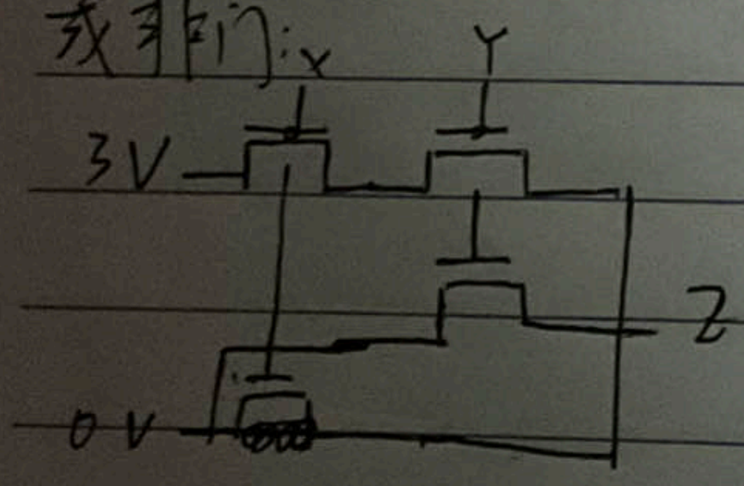
非门:



与非门:



或非门:



1.30

工艺：CMOS电路、TTL电路 2类
规模：小规模集成电路、中规模集成电路、大规模集成电路

超大规模
特性：负
1、11）10
除算法：
10000
除法：1
2500|2
625|2
156|2=
39|2=
9|2=
2|2=
逆序有

超大规模集成电路、巨大规模集成电路

特性：负载能力、延迟特性、功耗特性、实用和处理