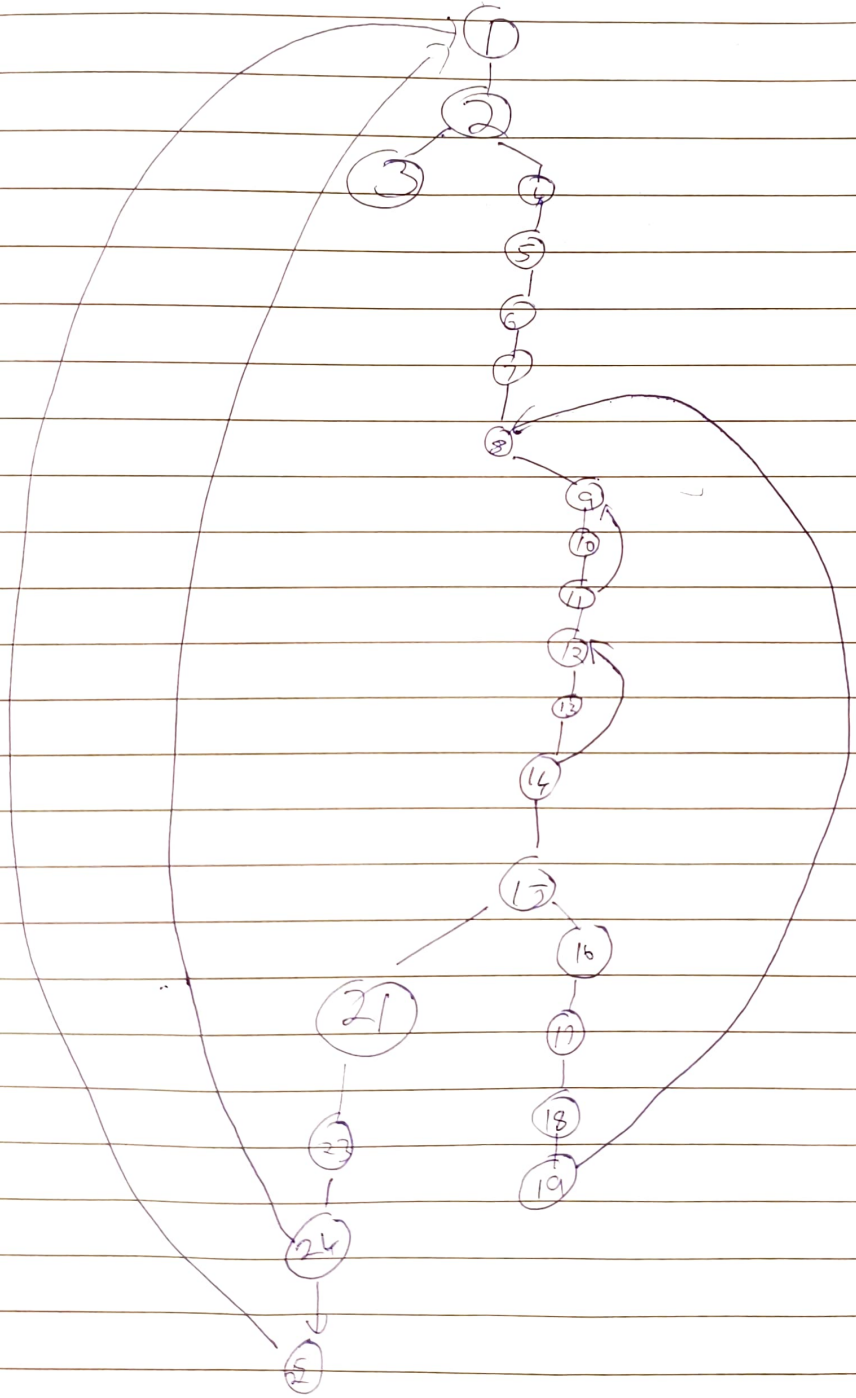
pg. //

Date: / /

CW-1

1 If xs = [0, 0, 0] it will go into an infinite loop as while loop condition swapped = true never becomes false

2



papergrid

Date: / /

3 My program has no unreachable nodes. All the nodes can be reached from entry node. It has no infeasible edges because all edges are guarded by conditions that are possible.

6

TC	inputs	8	9	11	expected O/P
1	[-1,0,1]	[0,1,2]	[0,1,2]	[0,1,2]	(-1,0,1)

4 It is not possible as the C0 coverage is satisfying when C1(2) is satisfied

5 It is not possible to provide C0 & C1(2) coverage separately as tc for C0 will satisfy C1(2)

Date: / /

Problem 2

Input A	Input B	I/P C	I/P D	Expected op
T	T	T	F	F
F	T	T	T	F
T	F	T	F	F
F	T	T	F	F

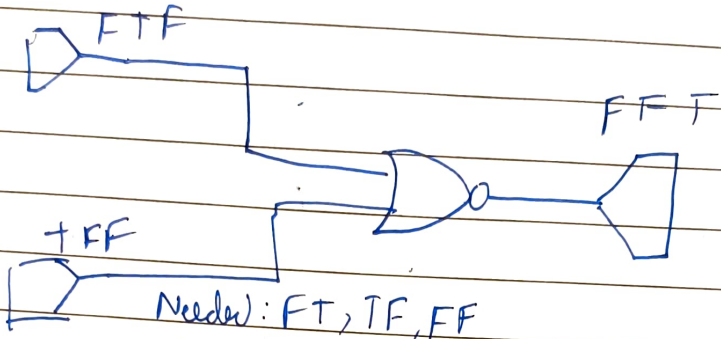
A or nor B nor (C and D)

A	B	C	D	B	A or B	C and D	E nor F
					E	F	
0	0	0	0	1	1	0	0
0	0	0	1	1	1	0	0
0	0	1	0	1	1	0	0
0	0	1	1	1	1	1	0
0	1	0	0	0	0	0	1
0	1	0	1	0	0	0	1
0	1	1	0	0	0	1	0
0	1	1	1	0	0	1	0
1	0	0	0	1	1	0	0
1	0	0	1	1	1	0	0
1	0	1	0	1	1	1	0
1	0	1	1	1	1	1	0
1	1	0	0	0	1	0	0
1	1	0	1	0	1	0	0
1	1	1	0	0	1	0	0
1	1	1	1	0	1	1	0

A	T	F	T	F
B	T	T	F	T
C	T	F	T	F
D	F	F	T	F
Z	F	T	F	T

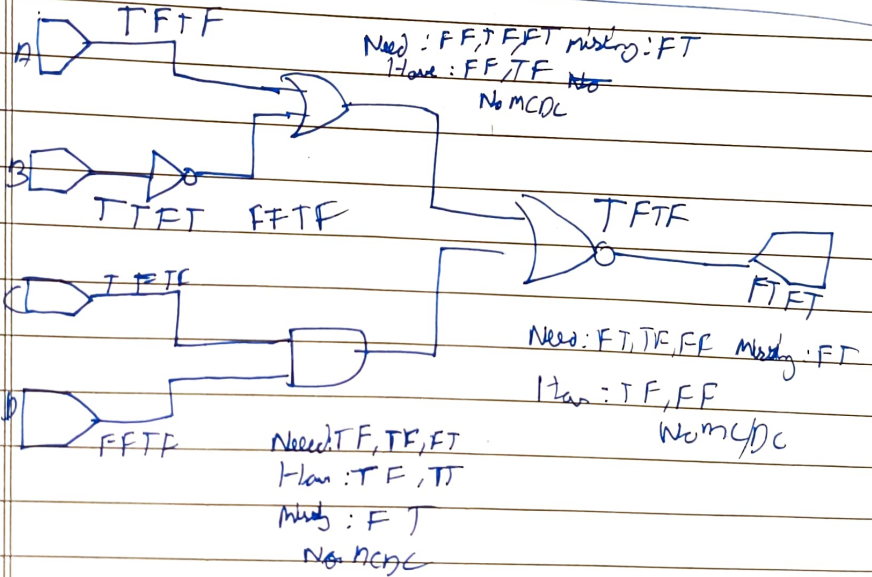
2 The i/p that cause masking for the NOR gate are (T,F) & (F,T). For these i/p combinations, regardless of the value of the other i/p of NOR gate is always F.

3



Needed: FT, TF, FF
Have: FT, TF, FF

4



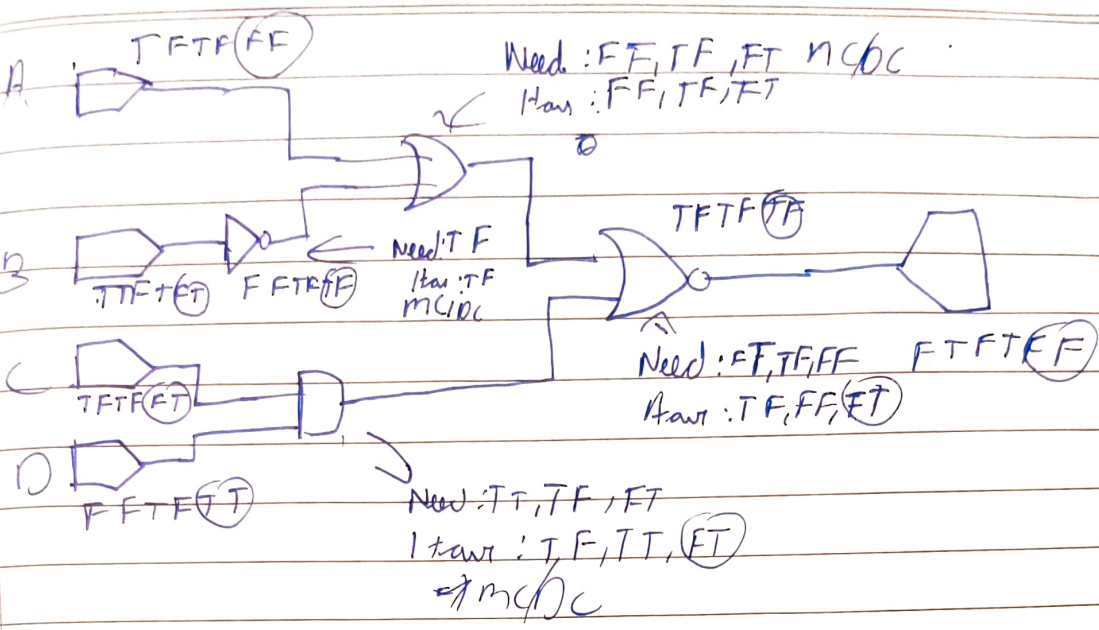
Need: FF, TF, FT missing: FT
Have: FF, TF
No MCDC

Needed: TF, TF, FT
Have: TF, TT
Missing: FT
No MCDC

Need: FT, TF, FF Missing: FT
Have: TF, FF
No MCDC

Date: / /

5



The extended test suite provides MC/DC because:

- It covers all the required test cases for the nor, or, not & and operators
- It is not possible to provide MC/DC with fewer test cases because each test case covers a required test case that is not covered by other t/c

3

i

Vars	Defined at	Used at
base	L 15	9, 17
exponent	1, 9, 15	3, 7, 9, 15, 16
modulus	1	9, 11, 17
baseToHalfExponent	9, ~~11~~	11
baseToExponentMinusOne	15	17

2 {3,5} — O

{3, 7, 9, 11} — bto HE

{3, 7, 13, 15, 17} - b TEMO

3

I/p (bool, bool, bool)	Expected O/p	Observed O/p
3, 0, 5	1	1
2, 1, 7	2	2
2, 2, 5	4	4
3, 0, 5	2	2

4 a) disagree to the statement. While satisfying the All-Uses criterion helps detect potential faults related to incorrect use of vars, it does not guarantee detecting all potential faults. There could still be faults in the logic / flow, ~~one~~ off-by-one errors, etc. that an All-Uses adequate test suite may not cater. The quality depends on satisfying ~~not~~ multiple coverage criteria like statement / branch coverage as well. No single criterion can guarantee a high quality test suite. multiple criteria need to be combined