

SURNAME: Miller

FORENAME(S): Owen

12 Pages

1. Please give the information requested in the boxes
2. Enter your name in the space provided to the right, for the invigilator to see, and seal down (using the label provided) to hide your name.
3. The answers must be legibly written. The Examiners can either sign your name in cursive script or have it typed and the expense of typing charged to the candidate.
4. Write your answers in ink.
5. Begin each answer on a fresh page. Do all rough work in the answer book and cross it through.
6. No part of this book is to be torn out; it must be handed in complete.
7. If more books than one are used, fasten them together using the tags available from the invigilator(s).
8. **Every book must be handed in. In no circumstances may answer books, used or unused, be taken out of the examination venue.**

7	Number of Answer Books handed in	
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List the numbers of the questions you have attempted	Office Use
1	6
2	0
3	3
4	10
5	$\frac{1}{2}$
6	0
	$13\frac{1}{2}$
Total	$27\frac{1}{2}$

$$\begin{array}{r} 0 \\ 0 \\ 3 \\ 10 \\ 1/2 \\ 0 \\ \hline 13\frac{1}{2} \end{array}$$

1

a Return to the start

x

x

b turns off the PIC

x

x

c add L to W

x

x

d

0

e

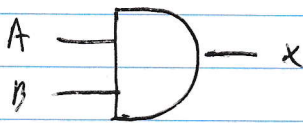
0

2

0

0

3



A	B	X
0	0	0
1	0	0
0	1	0
1	1	1

✓

✓

3

3

4

a A B C

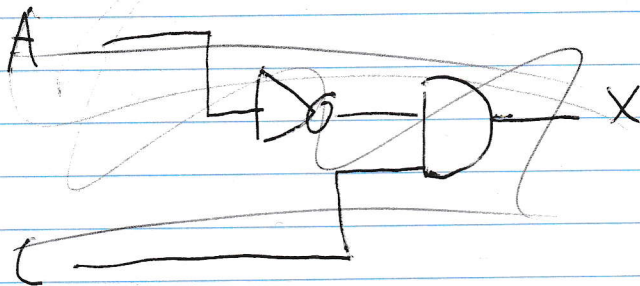
$$(\bar{A} + (\overline{B+C}))C = X$$

m n

A	B	C	m	n	O	X
0	0	0	1	1	0	0
0	0	1	1	0	1	1
0	1	0	1	0	1	0
0	1	1	1	0	1	1
1	0	0	0	1	1	0
1	0	1	0	0	0	0
1	1	0	0	0	0	0
1	1	1	0	0	0	0

b

c DC B A



A	B	C			
0	0	0	1	0	0
0	1	0	1	1	0
0	0	1	1	0	1
1	0	0	0	1	0
0	1	1	0	0	0

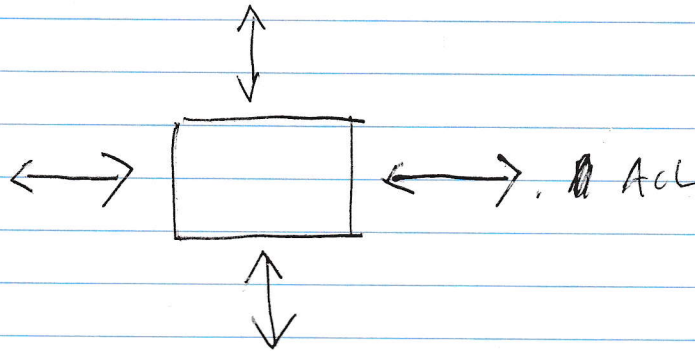
5

Von Neumann uses less Architecture

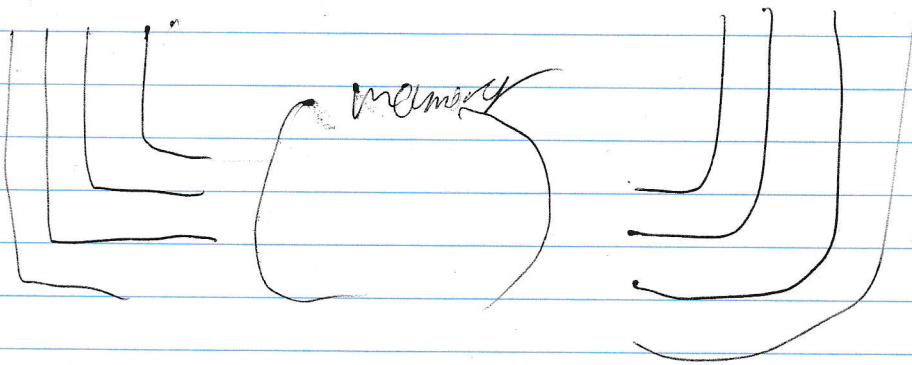
Harvard has Read and write memory

 $\frac{1}{2}$ $\frac{1}{2}$

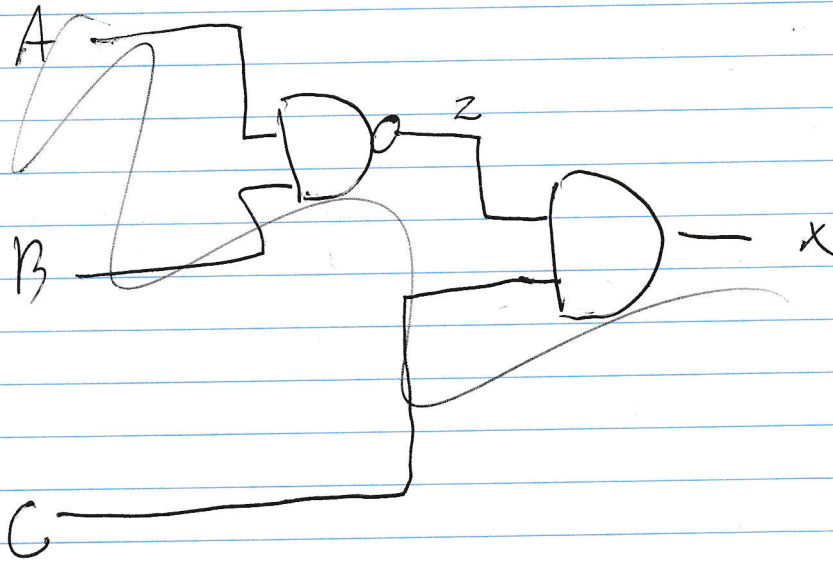
Harvard



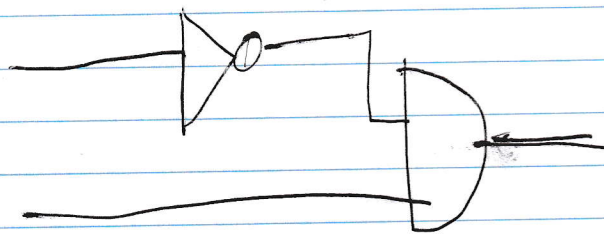
Von neumann



46



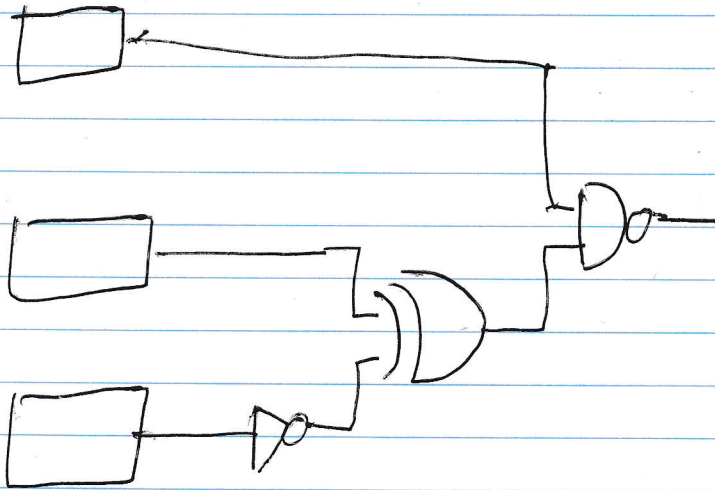
A	B	C	Z	X
0	0	0	0	0
0	0	1	0	0
0	1	0	0	0
0	1	1	1	0
1	0	0	0	0
1	0	1	0	0
1	1	0	0	0
1	1	1	1	1



0	0	0
0	1	1
1	0	0
1	1	0

4

6



0	0	0	1	1	1
0	0	1	0	0	1
0	1	0	1	0	
0	1	1	0	1	
1	0	0	1	1	
1	0	1	0	0	
1	1	0	1	0	
1	1	1	0	1	