



Examination Answer Books

12 Pages

Instructions to Candidates

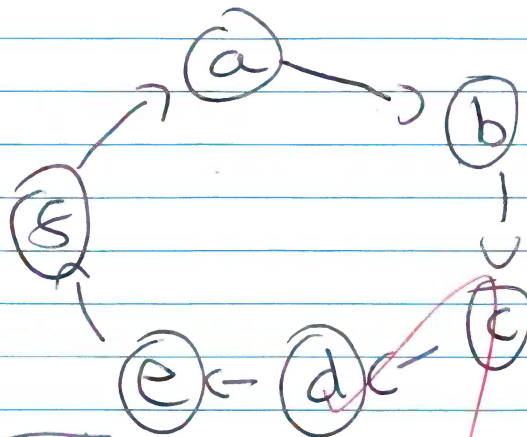
1. Please give the information requested in the boxes below.
2. Enter your name in the space provided to the right, fold and seal down (using the label provided) to hide your name.
3. The answers must be legibly written. The Examiners can either ignore or have it typed and the expense of typing charged 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.

1	Student Number	2215291
2	Title of Examination Paper	Electronics II
3	Module Code	ACDA6001
4	Date and Time of Examination	08/05/25
5	Examination Venue	IQ UWTS D
6	Seat Number	17
7	Number of Answer Books handed in	1

List the numbers of the questions you have attempted	Office Use
1 abc	15 ✓
2 abc	- 0 -
3 abc	12 ✓
4 abc	16 ✓
4 i:	02 ✓
Total	45/100 PLP

1

a



4

b

PS	NS
a	b
b	c
c	d
d	e
e	s
s	a

PS	NS
a	0
b	1
c	0
d	1
e	0
s	1
	0

4

c

a $\Rightarrow$ 000b $\Rightarrow$ 001c $\Rightarrow$ 010d $\Rightarrow$ 011e $\Rightarrow$ 100s $\Rightarrow$ 101g $\Rightarrow$ dddH $\Rightarrow$ ddd

2

d

q ₀	j	k
00	0	d
01	1	d
10	d	1
11	d	0

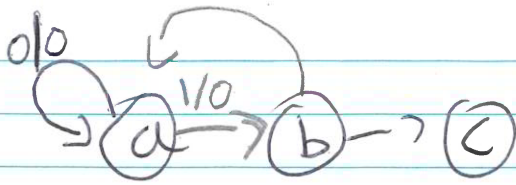
$Q_2 Q_1 Q_0$	$Q_2 Q_1 Q_0$	x	~~$J_2 K_2$~~	$J_1 K_1$	$J_0 K_0$
000	001	0	od	od	ld
001	010	1	od	ld	dl
010	011	0	od	do	ld
011	100	1	ld	dl	dl
100	101	0	do	od	ld
101	000	1	dl	od	dl
ddd	ddd	0	dd	dd	dd
ddd	ddd	1	dd	dd	dd

J_2	Q_2	00	01	11	10
0				1	
1		0			

15
25

1

2



✓

0

✓

(a)

PS	x	NS
a	0	a
a	1	b
b	0	c
b	1	a
c	0	
c	1	
d	0	
d	1	

✓

✓

0

✓

c)

a $\Rightarrow$ 000

b $\Rightarrow$ 001

c $\Rightarrow$ 010

D $\Rightarrow$ 011

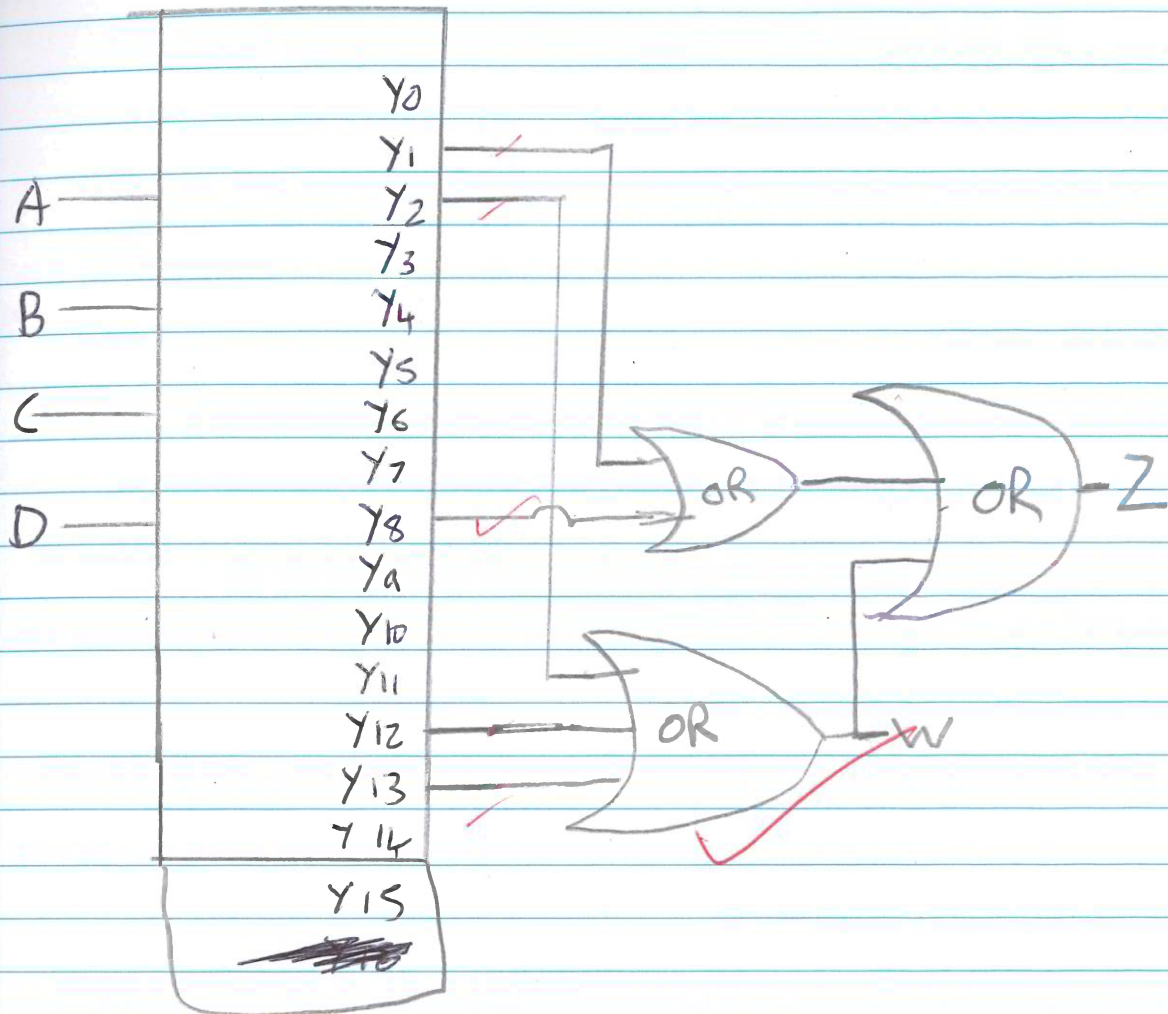
~~100~~

~~101~~

✓

0

✓



b)

A	B	C	D	Z	W
0	0	0	0	0	0
0	0	0	1	1	0
0	0	1	0	1	1
0	0	1	1	0	0
0	1	0	0	0	0
0	1	0	1	0	0
0	1	1	0	0	0
0	1	1	1	0	0
1	0	0	0	1	0
1	0	0	1	0	0
1	0	1	0	0	0
1	0	1	1	0	0
1	1	0	0	1	1
1	1	0	1	1	1
1	1	1	0	0	0
1	1	1	1	0	0

c) Simplified

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

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

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

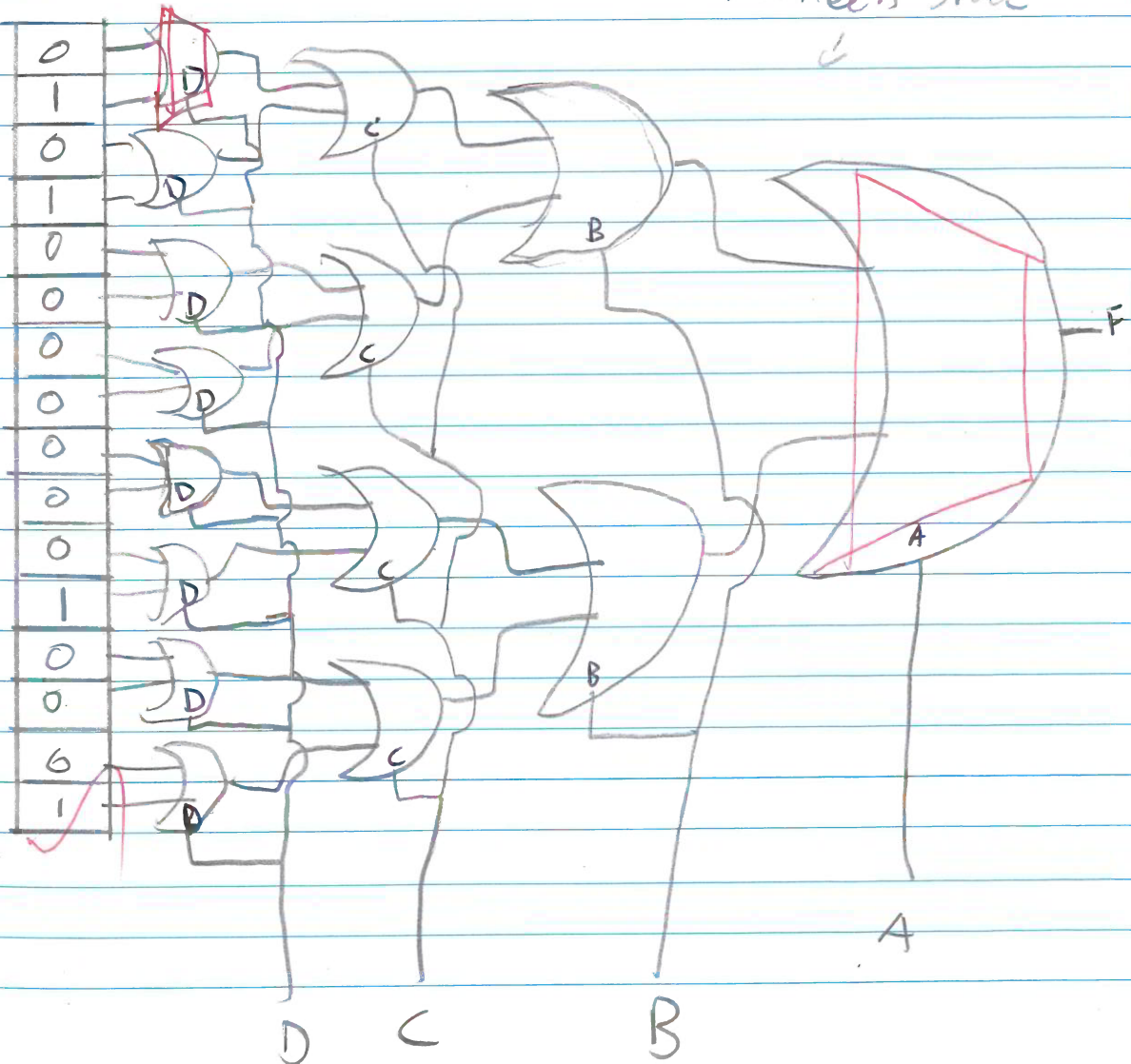
Question No.

Examiner Only

4
a)

A	B	C	D	S
0	0	0	0	0
0	0	0	1	1
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	0
1	0	0	0	0
1	0	0	1	0
1	0	1	0	0
1	0	1	1	1
1	1	0	0	0
1	1	0	1	0
1	1	1	0	0
1	1	1	1	1

Not much space



3

7

with values 0010

A is 0

B is 0

C is 1

D is 0

Using My LUT

The first stage input is D which is 0
when 0 is inputted the block outputs
the top value therefore every single
block in the first stage outputs a 0

for the second stage C is used. This is
a value of 1 and therefore outputs the
bottom number inputted into it, in this case
because of stage one's outputs they are
all 0, this means stage 2 also selects
0's to output.

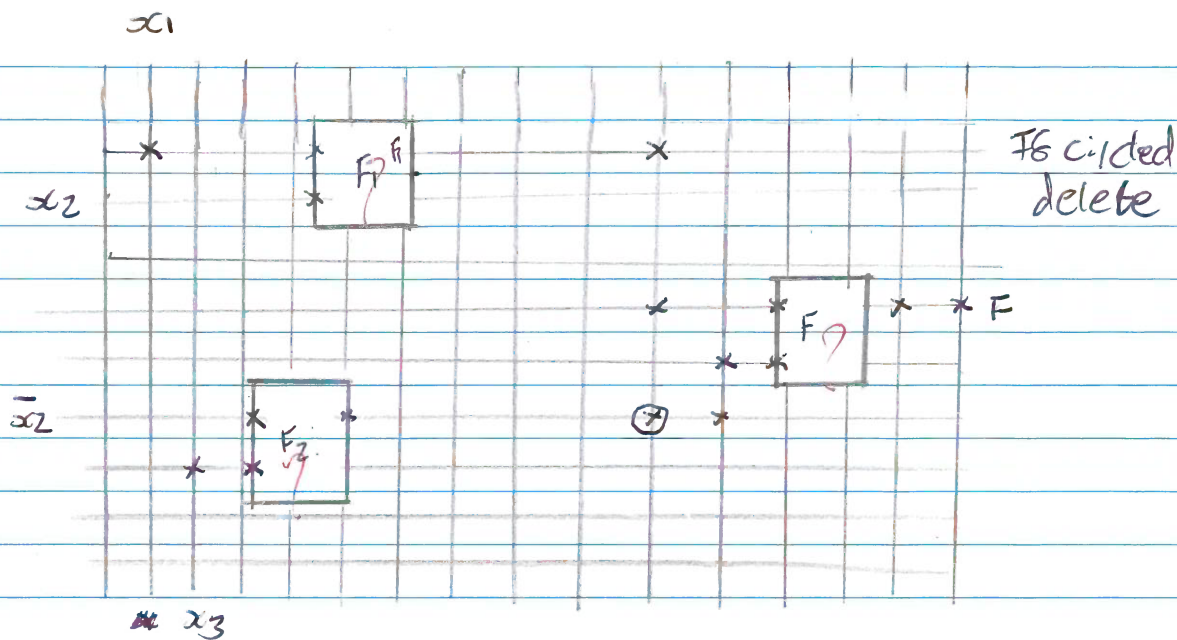
Stage 3 has an input of B, a value of 0
therefore it selects the top number again.
after the 2nd stage all the inputs to the 3rd
stage are also 0's therefore it also
outputs 0's.

The final stage only has two inputs
~~Both are zero~~, the to select from
they are both 0. Since A is also
0 it selects the top 0 and outputs
this as 5

6

~~5~~

ii



18
25

20
25