



in Program

12 Pages

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

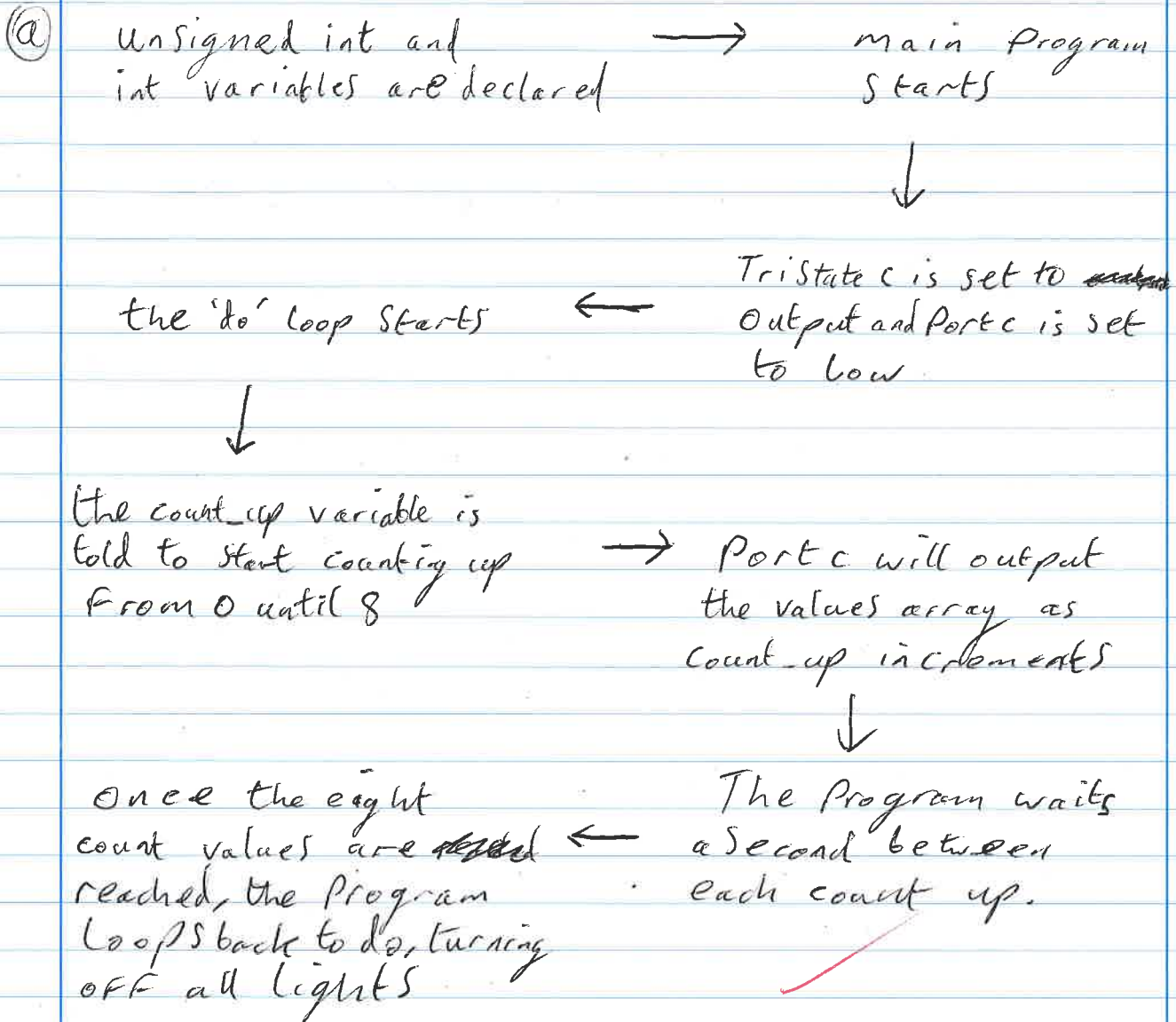
1	Student Number	2204524
2	Title of Examination Paper	Electronics 1
3	Module Code	ACDB5002
4	Date and Time of Examination	07/05/24
5	Examination Venue	1Q 208
6	Seat Number	
7	Number of Answer Books handed in	

[illegible]

$\frac{69}{100}$ ~~He~~

(Gweler yr ochr arall am y fersiwn Cymraeg)

(Q1)



(c) Unsigned int values [8] = {0x01, 0x03, 0x07, 0x0F, 0x1F, 0x3F, 0x7F, 0xFF};

```
int count_up;
void main()
```

```
{
```

```
    tris c = 0;
    Port c = 0;
```

do

{

for(count-up = 0; count-up $\leq$ 8; count-up++)

{

port c = count-up [value];

delay - ms (100);

}

while(1);

{

Structure

5

O/p given

M.L
01/05/2024

2

optimization

3

working

5

Circuit design
simulation

8

5

33
40

33

40

(Q2)

- (a) The diagram in question two is a Light Sensor circuit diagram. The light sensor circuit is used to detect light from a source such as a torch emitting onto a photo sensor. When light emitted onto the photo sensor the photo sensor will allow current to run through it. When current is running through it, the amplifier is able to operate through the photo sensor now allowing current through. With the amplifier now in operation, the LED has current flowing through it and now is ~~turned off~~ turned OFF unlike when no light is on the photo sensor, the LED will be turned on.

(5)

5

The intensity of the light required to turn the LED on or off can be controlled by the potentiometer resistor.

(15)

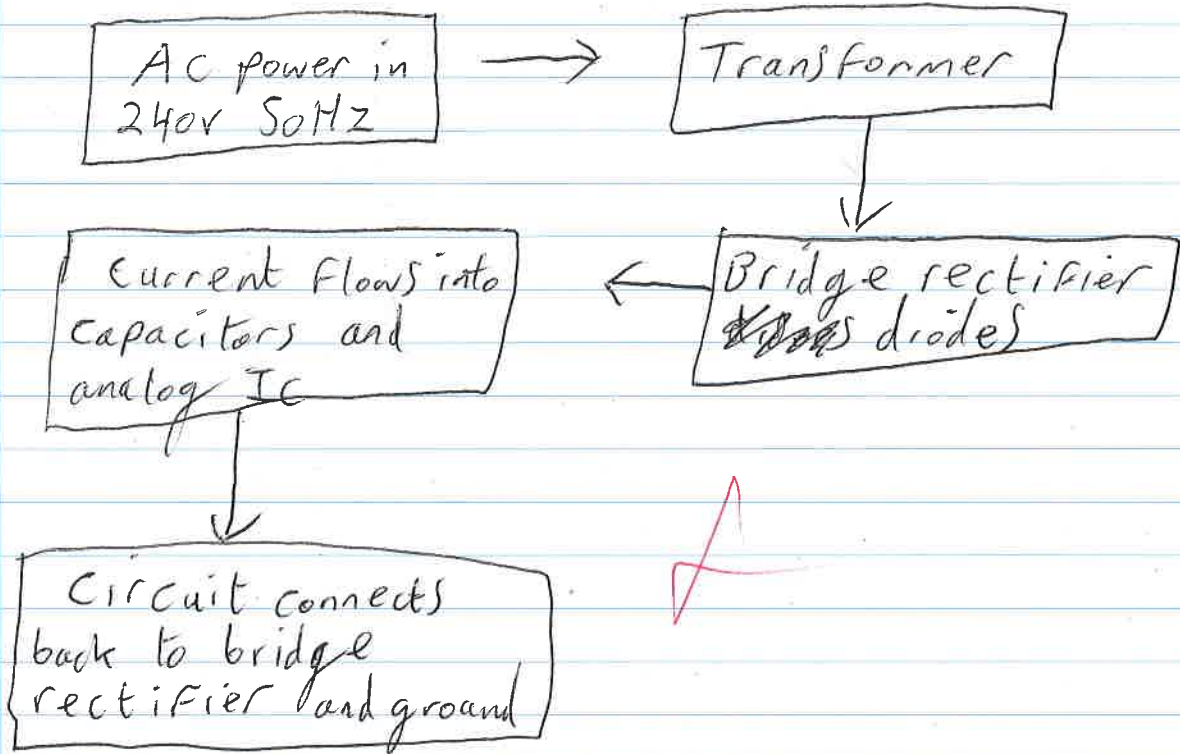
Simulation

15

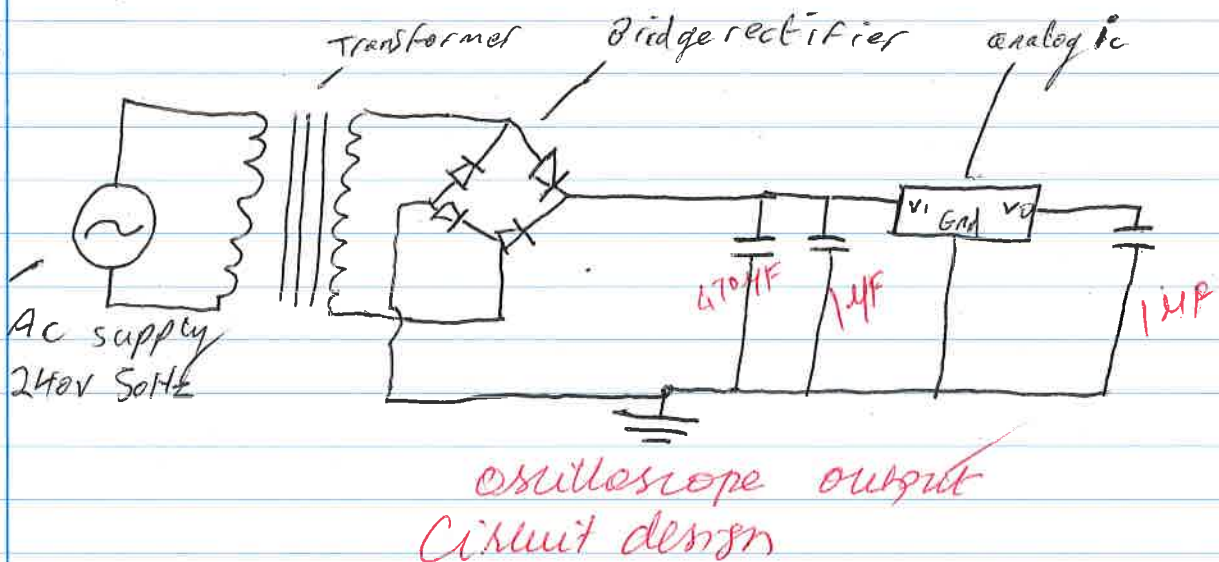
(20/20)

(20/20)

Q3
①
a

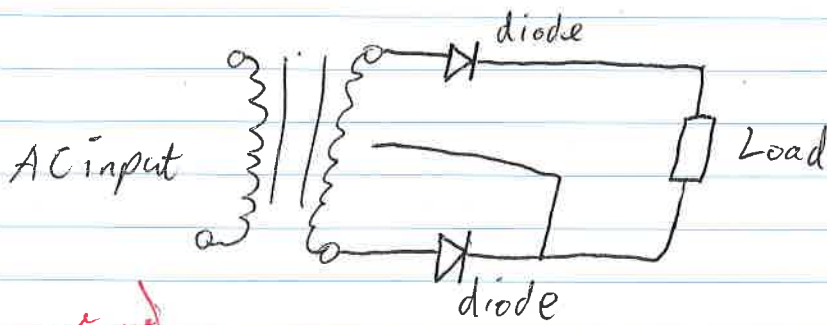


b



d

11



with only one signal
partial output
12.1
0.165

The Full wave rectifier is able to convert a AC source into DC using the Full sine wave with no downtime.

The Full wave rectifier can enable a DC current to be constant even if the wave goes into a negative cycle.

Unlike the half-wave rectifier which is only able to be used when the wave cycle is within the positive stage of the cycle.

16
40

18
40