

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 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 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.**

List the numbers of the questions you have attempted	Office Use
Q1	25
Q2	~~25~~ 11
Q3	24
Q4	17
Total	~~91~~ / 100

(Gweler yr ochr arall am y fersiwn Cymraeg)

~~91/100~~ PL $\frac{P}{14/5/26}$
77½ PL

Q3

b)

- (1) When the Button is Pressed the LED connected to RBO is turned on. This ~~40~~ LED only stays on when the ~~Switch~~ is Pressed. Also, when it is on it turns off the LED connected to RBI. This only stays off during the period of time where the Button is Pressed. As when the Button is released the LED connected to RBI is turned back on.

LED connected to RBO = D1

LED connected to RBI = D2

- (11) I have explained this above however, when the Switch isn't pressed the LED D2 is turned on. However when the Switch is pressed that turns off LED D2 and turns on LED D1. This stays like this until the Button is released. The Switch controls which LED is turned on as a result of this.

Q3

b)

- iii) ~~RAU~~ RBU 's Role is to Determine which LED will be turned on and off. This controls Both LED's as if you want LED 1 on and LED 2 off, then you should press the Button and keep it held down for as long as you want that. However, if you want the opposite, you should leave the ~~LED~~ switch off.

4

H8

$$\begin{array}{r} 28 \\ 25 \\ \hline \end{array}$$

from
H8
doc

$$\begin{array}{r} 21 \\ 25 \\ \hline \end{array}$$

$$\begin{array}{r} 11\frac{1}{2} \\ 25 \\ \hline \end{array}$$

Q4

a)

When Executed, When the Button is pressed, the LED is turned on, then on the Virtual terminal the words "LED ON" are shown, ~~at~~ this shows for a second. When the ~~switch~~ Button ^{released} is off, it will turn off the LED and on the Virtual terminal will say "LED off", this will be on for a second.

Before the operations take place the LED's are off and nothing is shown on the Virtual terminal.

d) This means that the pins on Port B are set to be off as ~~with~~ ~~the~~ the LED should only turn on when the Button is pressed. This is so that the code is correct.

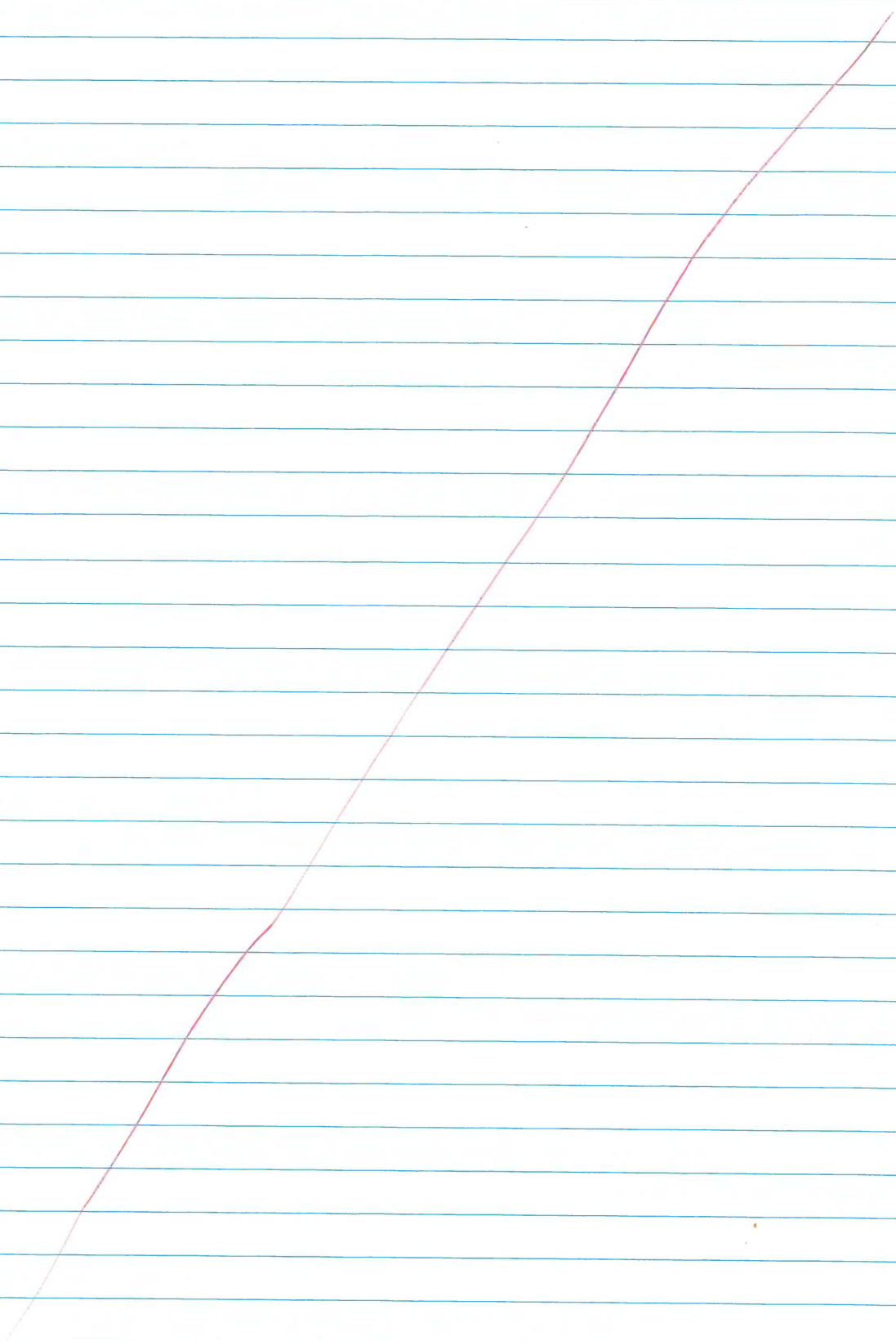
Des 1
20

f) In real life, without a pull down resistor, it could burn out and short circuit the button, the resistor is there as protection against this. If it is shorted then it will cause safety issues and the circuit will not work.

17
25

Question No.

Examiner On





Question No.

Examiner Only



Arholwyr yn unig

Rhif y Cwestiwn