



Prifysgol Cymru
Y Drindod Dewi Sant
University of Wales
Trinity Saint David

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 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.

Complete, fold and seal
(see note 2 below)

SURNAME: Davies

FORENAME(S): John Steven

1	Student Number	1504731/E
2	Title of Examination Paper	Computer Engineering and microprocessors exam
3	Module Code	M4X00370
4	Date and Time of Examination	9th May 2018
5	Examination Venue	Main hall Tycoch campus
6	Seat Number	3
7	Number of Answer Books handed in	1

List the numbers of the questions you have attempted	Office Use
Q1	0
Q2	7
Q3	8
Q4	1
Q5	0
Total	16

= 32% ✓

Question One

Z =

C =

DC =

Post 1 equ 0E

MOV LW 0X7B

MOVWF Post 1

MOVLW 0X96

ADDWF Post 1,1



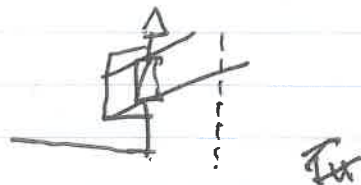
Question Two

- Subroutines are programmes within the main programme that can be used for delays and other similar programmes. ✓ 3 ✓
- Interrupts can be internal or external influences, ^{caused}
An ~~internal~~ interrupt can be a person pressing a key on the keyboard and the programme stops to analyse the interrupt overruling the main programming. ✓ 3 ✓
- The stack stores ~~data~~ ~~from~~ data from both the interrupts and subroutine programmes into the memory stack. ✓ 1 ✓
- To ensure a programme continues after interrupt, would be by writing a return from interrupt path within the programming e.g. RETFIE or a GOTO code. ✓

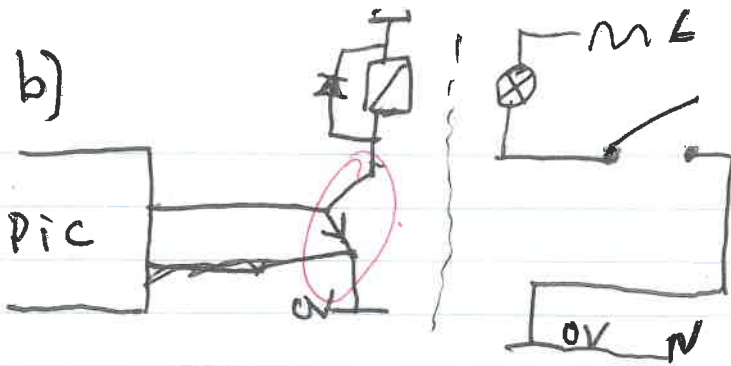
Question Three

- The reasons ~~you~~ it is not possible to connect a 16F84A PIC to an AC load is because it would be destroyed from the high voltage and lack of protection. ✓ ~~will~~

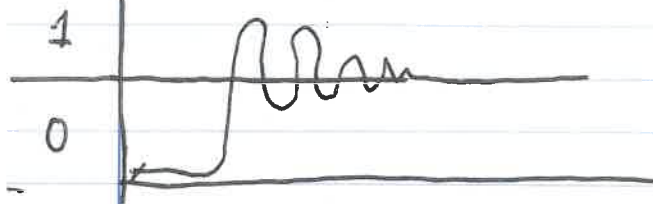
bf



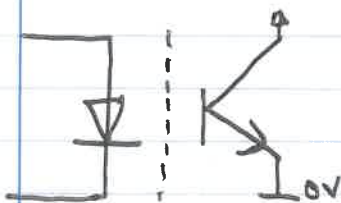
A transistor with the aid of a relay can be used because the low voltage from the transistor will power the relay which will in turn power ON/OFF state of a 230V AC switch. ✓



- c) When taking reading from switched inputs, ~~st~~ bouncing can occur, during the readings. The signal will bounce between Logic 1 and Logic 0, in a on, off, on, off, on, on fashion. Slow the readings down and carefully analyse until you witness a steady state indicating the signal is equal.



- d) ~~You can connect a switched input to a PIC by using a transistor with a relay, and a diode to protect against inductive currents.~~

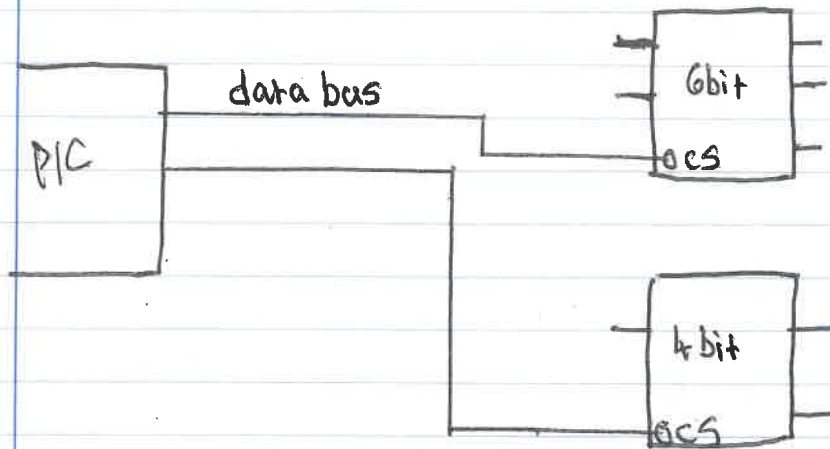


oclocoupler

You would connect the switched input to a PIC by using a oclocoupler which has a space inbetween for protection and a diode to protect from Inductive currents.

Question Fourcircuit
select

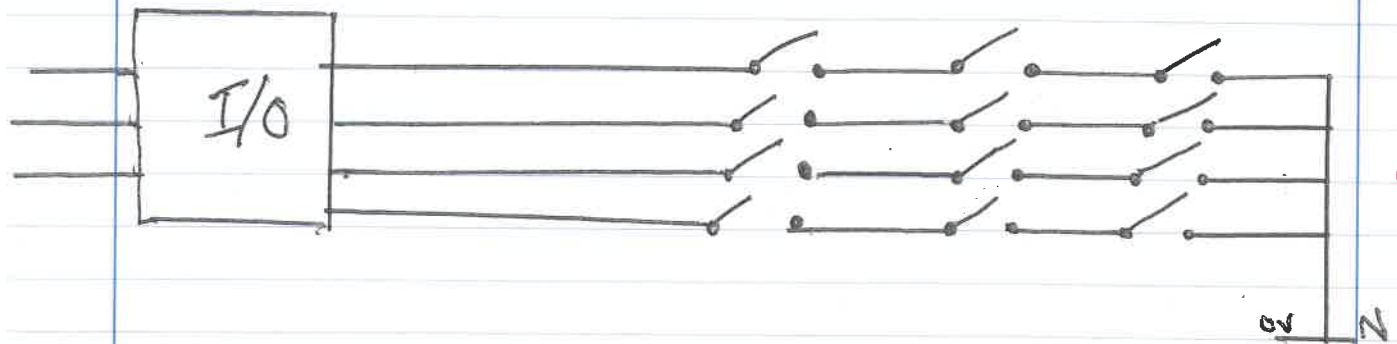
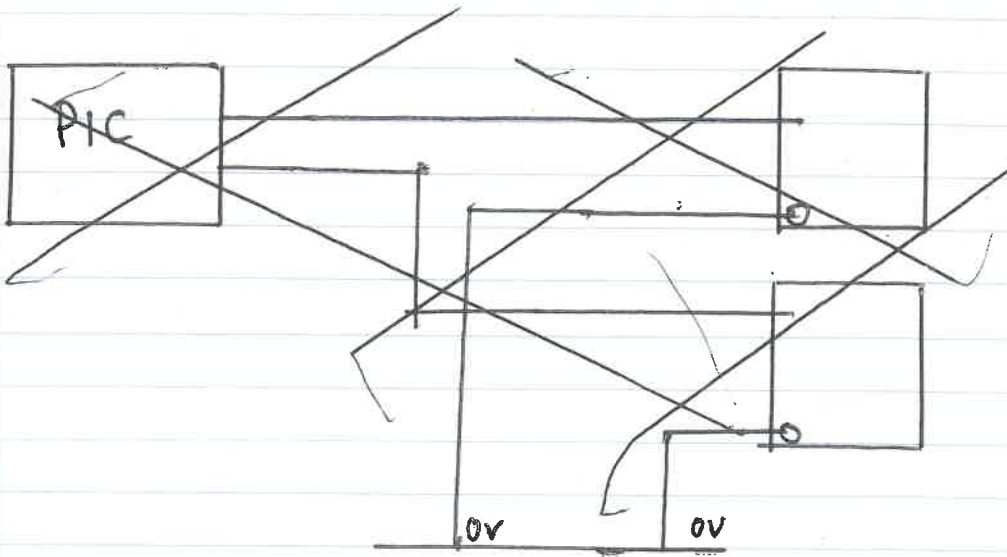
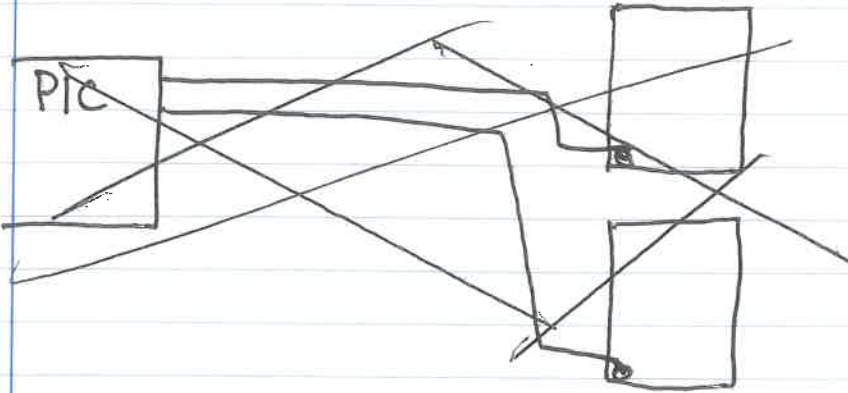
a)



The entire memory addressing capability of the processor can be utilised by means of splitting the data into two segments via circuit select.

b)

Question Five



0 ✓