



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, cover 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.

1	Student Number	1907932
2	Title of Examination Paper	introduction to electronics
3	Module Code	m4x01510
4	Date and Time of Examination	Jan 2020 12pm
5	Examination Venue	VW TSD
6	Seat Number	G004

7	Number of Answer Books handed in	1
---	----------------------------------	---

Complete, fold and seal
(see note 2 below)

SURNAME:

CROFT

FORENAME(S):

John

Redvers

List the numbers of the questions you have attempted	Office Use
1	-
2	6.5
3	-
4	-
Total	6.5/26.5 = 8.5%

QUESTION 1

Using Ohms and Kirchhoff's Laws determine: -

- a) The Resistance, Voltage, Current values for each resistor in the circuit as shown in Fig 1.1

$$R = \frac{V}{I} = \frac{10}{2} = 5V$$

2 marks per resistor
16 marks total

- b) The input resistance of the circuit as shown in Fig 1.1

4 marks

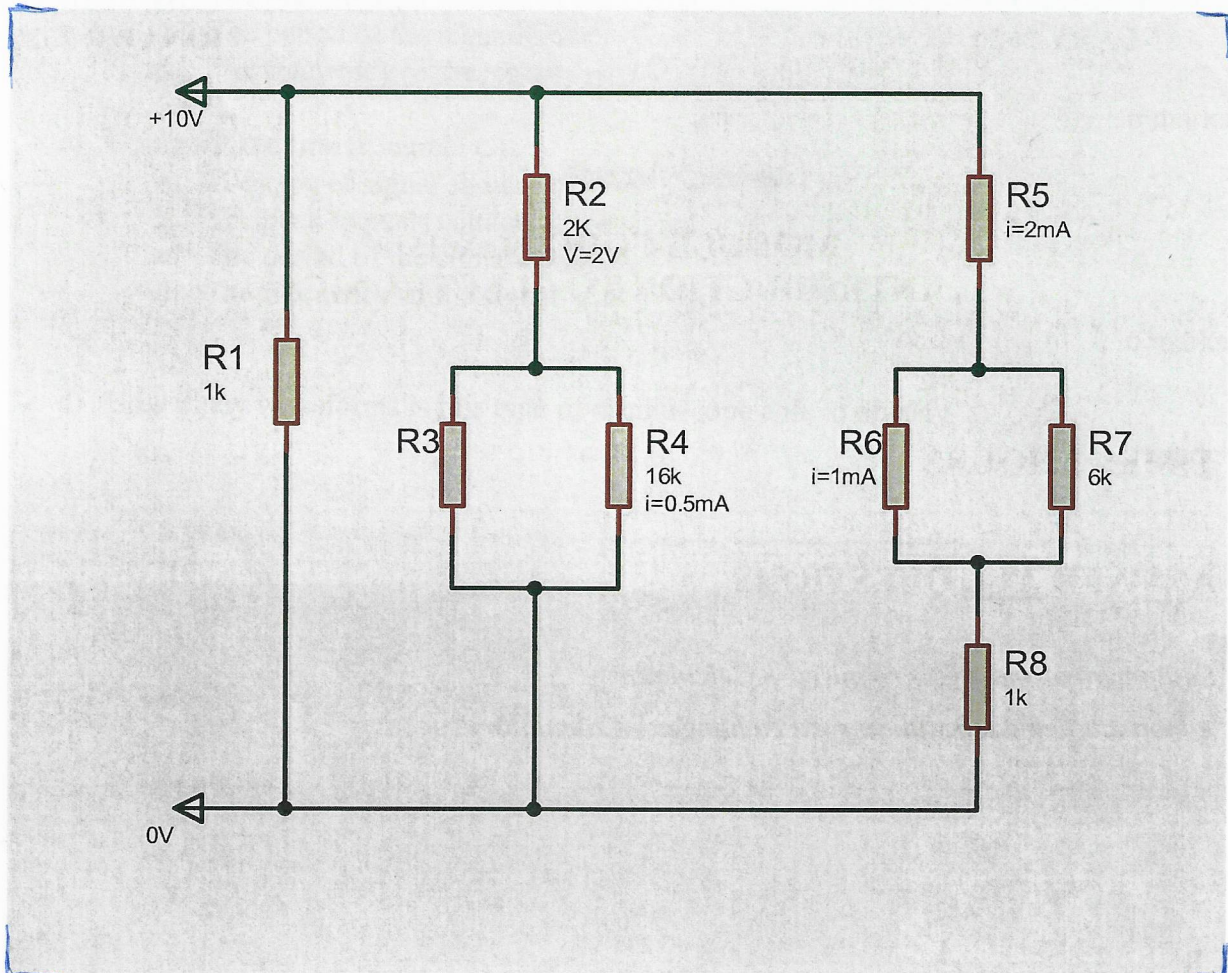


Fig 1.1

QUESTION 2

Examine the oscilloscope display below (Fig 2.1) and determine the following:

- a) Using the yellow line (Channel A)
- The type of signal shown ~~sinusoidal wave~~ (A) wave wave
 - The peak to peak voltage of the signal ~~10~~ 10
 - The period of the signal ~~10~~ 10
 - The frequency of the signal ~~10~~ 120

6 marks

- b) Using the blue line (Channel B)
- The type of signal shown (a) Square
 - The peak to peak voltage of the signal ~~10~~ 5
 - The period of the signal ~~10~~ 5
 - The frequency of the signal (d) 10

6 marks

- c) Using the red line (Channel C)
- The type of signal shown (a) Saw
 - The peak to peak voltage of the signal ~~10~~ 12
 - The period of the signal ~~10~~ 12
 - The frequency of the signal (d) 80

6 marks

- d) How many waveforms is this type of oscilloscope able to display

4

2 marks

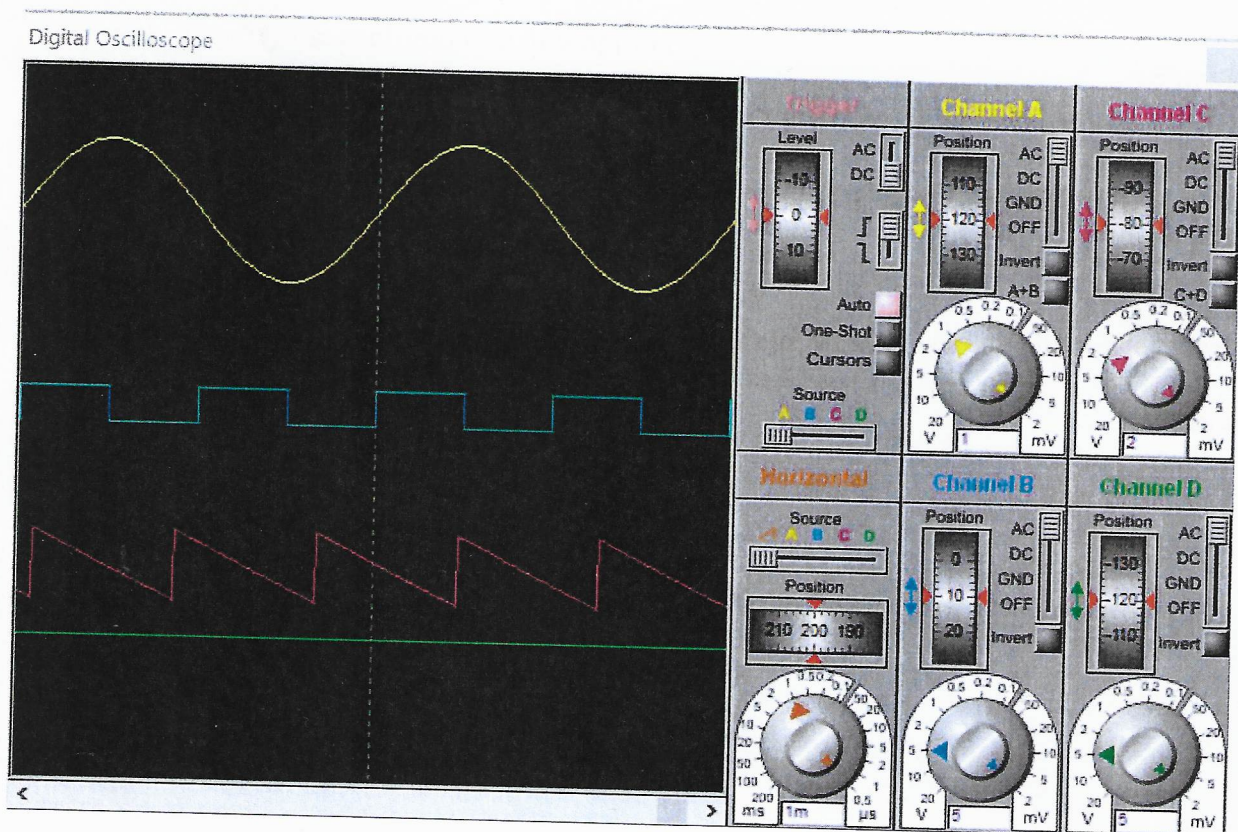
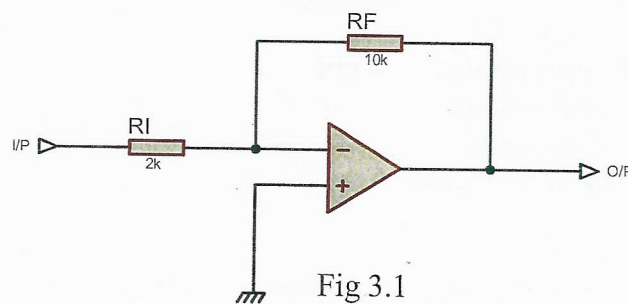


Fig 2.1

QUESTION 3

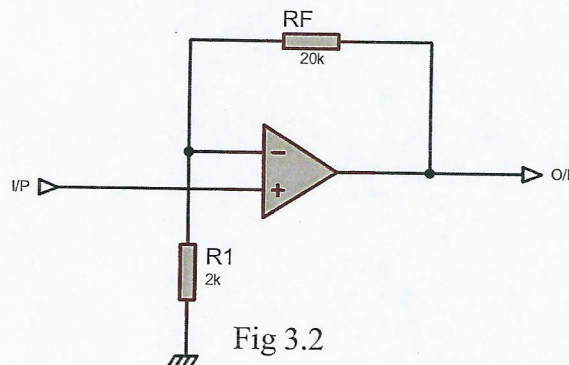
A) Using the amplifier shown in fig 3.1:-

- Identify the configuration of amplifier. 2 marks
- Provide the formula for the gain of the amplifier; 2 marks
- Calculate the gain of the amplifier 2 marks
- Should a 0.2 volt p-p signal be applied to this amplifier, what would be the output 2 marks
- Should a 0.2 volt p-p signal be applied to this amplifier, what would be the phase of the output compared to the input. 2 marks



B) Using the amplifier shown in fig 3.2:-

- Identify the configuration of amplifier. 2 marks
- Provide the formula for the gain of the amplifier; 2 marks
- Calculate the gain of the amplifier 2 marks
- Should a 0.5 volt p-p signal be applied to this amplifier, what would be the output 2 marks
- Should a 0.5 volt p-p signal be applied to this amplifier, what would be the phase of the output compared to the input. 2 marks



QUESTION 4

Identify the gates shown below in Fig 4.1 and provide their truth tables:-

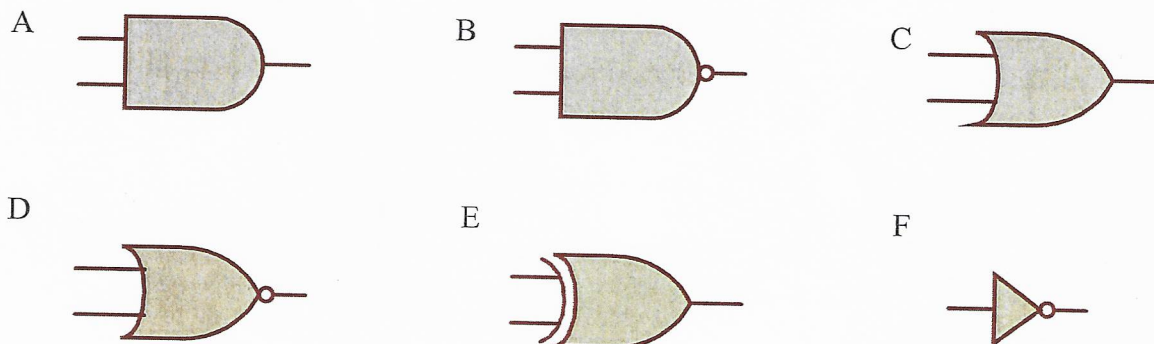


Fig 4.1

5 marks per gate
30 marks total

Diwedd/End