

**Complete, fold and seal
(see note 2 below)**

SURNAME: LAGWA

FORENAME(S): Dawid

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 cannot 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	170 3488
2	Title of Examination Paper	ELECTRICAL AND ELECTRONIC PRINCIPLES
3	Module Code	ACDA4002
4	Date and Time of Examination	15:00 21/05/10
5	Examination Venue	647
6	Seat Number	6010
7	Number of Answer Books handed in	1

List the numbers of the questions you have attempted	Office Use
1	1
2	0
3	0
4	0
Total	1/35

(Gweler yr ochr arall am y fersiwn Cymraeg)

2.86 %

$\frac{1}{35}$ gam

1.

1)

A)

 ~~$R_T =$~~

$$R_T = R_1 + R_2 + R_3 + R_4 = 4k \text{ } \cancel{\Omega}$$

$$\cancel{4k \Omega} \div \frac{4k}{12V} = \frac{1000}{3}$$

$$\frac{1000}{3} = 333.3 \Omega$$

$$R_T = 333.3 \Omega \quad \times$$

B)



$$I_S = \frac{V}{R + 4000 \Omega}$$

$$\frac{V}{R} = \frac{50V}{4000 \Omega}$$

$$\frac{50V}{4000 \Omega} = \frac{1}{60}$$

$$\frac{1}{60} = 0.0125 \text{ A}$$

$$I_S = 0.0125 \text{ A}$$

Right method
- wrong value for
resistance used.

①

✱

(C)



$$\frac{0.0125}{12} = \frac{1}{960}$$

$$\frac{1}{960} = 0.0010416 \quad \times$$

ii)

A) ✱ ✱

$$2V \div 0.010ms = 200ms \quad \times$$

B)

✱

$$C) 2V \times 10ms = \frac{1}{5}$$

$$\frac{1}{5} = 0.2 \quad \times$$

$$\sqrt{0.2} = \sqrt{\frac{5}{5}}$$

$$\frac{\sqrt{5}}{5} = 0.44$$

$$0.44 + 0.200 = \frac{16}{25}$$

$$\frac{16}{25} = 0.64 \text{ PK-PK} \quad \times$$

2

A)

$$i: 120V \div 250\Omega = \frac{12}{25}$$

$$\frac{12}{25} = 0.48V$$

$$ii: 100\mu F \div 60 + 1.2 = \frac{5}{3}$$

$$\frac{5}{3} = 1.6V$$

$$iii: 0.48V + 1.6V = \frac{96}{125}$$

$$\frac{96}{125} = 0.768V$$

B)

$$0.48 \times$$

$$0.48 + 1.6 + 0.768 = 2.848$$

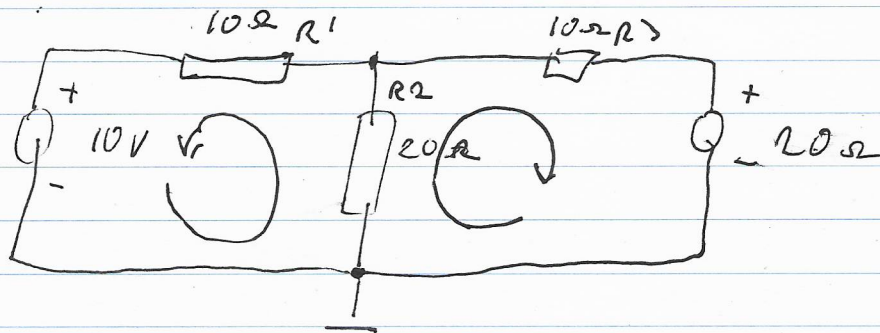
$$\sqrt{2.848} = \frac{2\sqrt{495}}{25}$$

$$\frac{2\sqrt{495}}{25} = 1.682 \text{ MHz}$$

C)

0.

3.

~~10Ω~~

$$\cancel{10V} + 10\Omega + 20\Omega = 30\Omega$$

$$30\Omega \div 10V = 3 \quad ?$$

$$3 \div 2 = 1 \frac{3}{2}$$

$$\frac{3}{2} = 1.5 \text{ AMPS}$$

$$20\Omega + 10\Omega = 30\Omega$$

$$30\Omega \div 20V = \frac{3}{2}$$

$$\frac{3}{2} = 1.5$$

$$1.5 \div 2 = \frac{3}{4}$$

$$\frac{3}{4} = 0.75 \text{ AMPS}$$

$$1.5 + 0.75 = \frac{9}{4}$$

$$\frac{9}{4} = 2.25 \text{ Amps}$$

W1 RRevi ON R2 = 2.25 Amps x.

4.

A)

0.