



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 answers 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	230 5979
2	Title of Examination Paper	Electrical and electronic principles
3	Module Code	ACDA4006
4	Date and Time of Examination	13/05/25
5	Examination Venue	YQ 310
6	Seat Number	3
7	Number of Answer Books handed in	1

List the numbers of the questions you have attempted	Office Use
1	15 ✓
2	0 ✓
3	2 ✓
4	0 ✓
Total	17%

(Gweler yr ochr arall am y fersiwn Cymraeg)

1)

$$V = I \times R$$

a)

20% power loss
total power loss 5 Watts

2. ✓

b)

$$I = \frac{P}{V} = \frac{1}{3.0} = 0.33 \text{ A}$$

4. ✓

c)

$$\frac{1}{\frac{1}{50} + \frac{1}{80}} = 30.77 \Omega$$

 $R_4 + R_3$

$$\frac{1}{\frac{1}{55} + \frac{1}{50}} = 26.20 \Omega$$

$$R_T = 26.20 + 20 = 46.20 \Omega$$

6. ✓

ii)

$$\frac{15}{50} = 0.3 \text{ A (mA 300)}$$

$$\frac{15}{46.20} = 0.32 \text{ A}$$

3. ✓

$$I = \frac{V}{R} = 20 \text{ mA} \frac{1}{10} + \frac{1}{2} + \frac{1}{3.5} + \frac{1}{1} + \frac{1}{6} = 0.48 \text{ K}\Omega$$

d)

 V_{R1} V_{R2} V_{R3} V_{R4} V_{R5}

$$Q_1 \text{ total } \frac{15}{25}$$

2)

- a) $R_1 4A$
 $R_2 2A$
 $R_3 300mA$ X
 $R_4 7A$
 $R_5 2A$

b) i) Total impedance = 40 Henry's X

ii) 7Amps X

iii) 70° X

Q2 total $\frac{0}{25}$ ✓

3)

- a) i) measure of resistance of current X
 ii) henry's X
 iii) something X
 iv) recommended voltage X

- b) i) 7A X
 ii) 4V X
 iii) 700Hz X

c) rectifier circuit to make AC to DC 2

Q3 total $\frac{2}{25}$ ✓

Load (Ω)	Load power (W)
4	12 X
8	28 X
12	37 X
16	49 X
20	60 X

b) graph on graph paper

Q.4 total $\frac{0}{25}$

2305979

