



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 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	140243
2	Title of Examination Paper	Electrical Technology
3	Module Code	PSDE4021
4	Date and Time of Examination	16-05-2018 16:00
5	Examination Venue	Pembrokeshire College
6	Seat Number	6
7	Number of Answer Books handed in	

[illegible]

(see note 2 below)

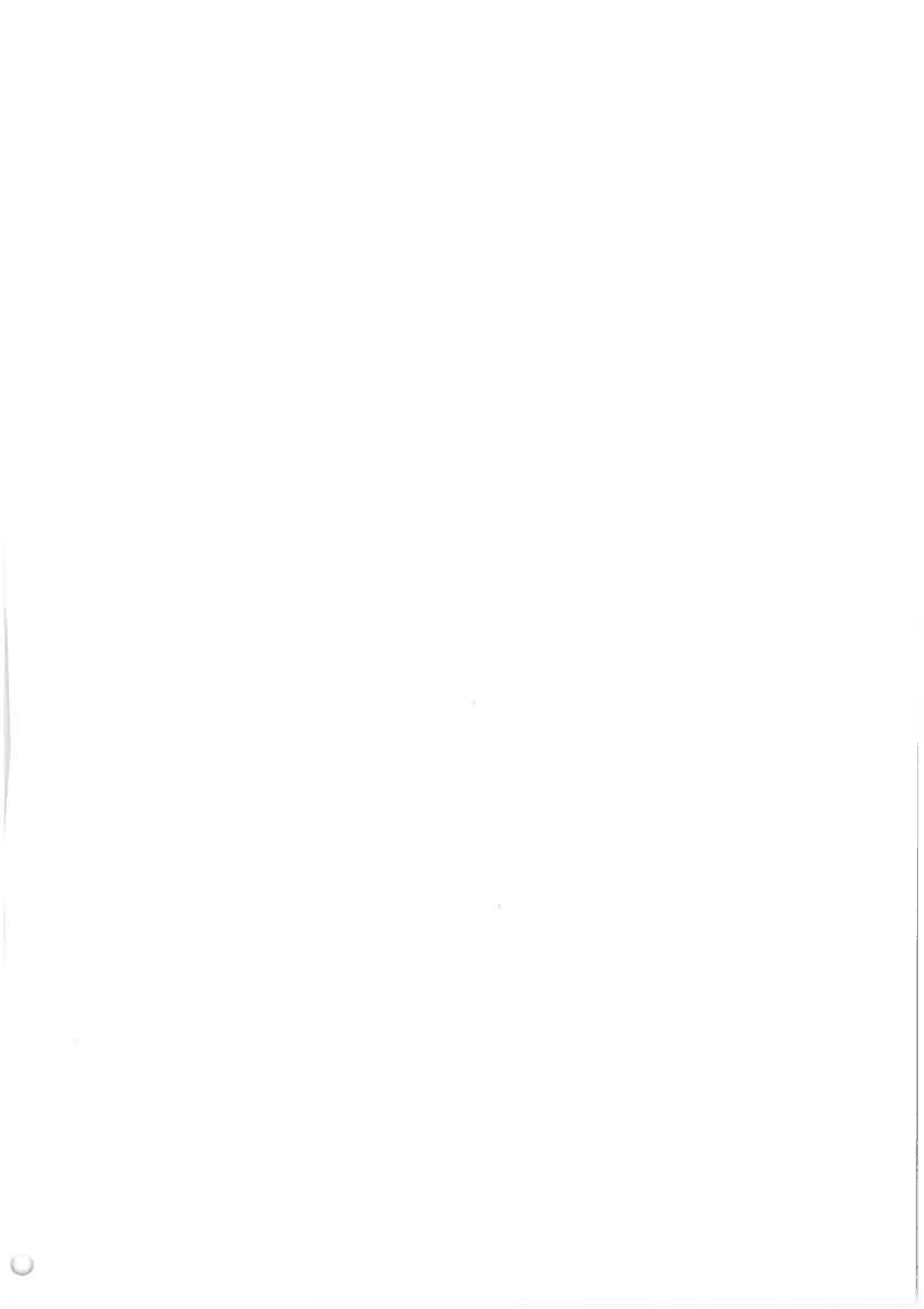
Complete, fold and seal

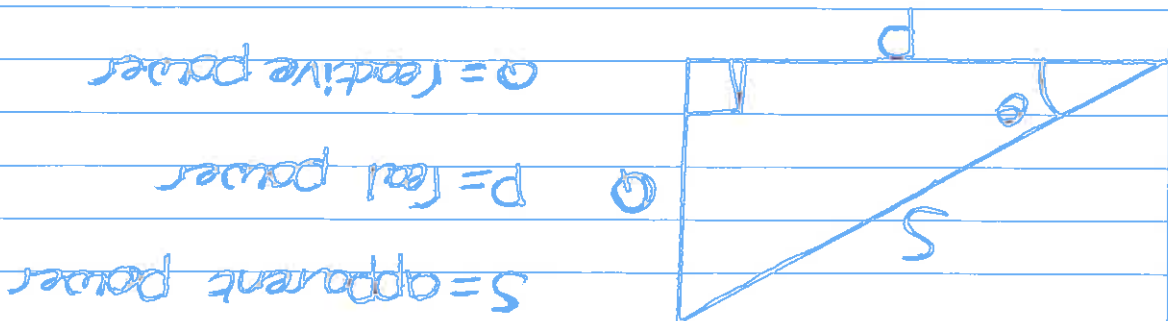
SURNAME:

Holmes

FORENAME(S):

Harley





$$S = IV$$

$$P = IV \cos \theta$$

$$Q = IV \sin \theta$$

1b
!! IXV

$$5 \times 240 = 1200 \text{ Vm}$$

$$!! IXV \cos \theta$$

$$1200 \times \cos = -0.5 \text{ W}$$

$$!!! IXV \cos \theta$$

$$1200 \times \cos \theta = -0.35 \text{ A}$$

1c

50p

5

3b

$$R_T = R_1 // (R_2 // (R_3 + R_4))$$

$$! \quad \frac{V}{R_1} = 5A$$

$$5mA$$

$$!! \quad \frac{V}{R_2} = 15A$$

$$!!! \quad \frac{R_3 \times R_4}{R_3 + R_4} = 2k\Omega$$

$$\frac{V}{R_{34}} = 7.5A$$

$$iv \quad I_T = I_1 + I_2 + I_3$$

$$= 27.5A$$

$$v \quad \frac{15}{R_1 + R_2 + R_3 + R_4} = \frac{15}{R_{1234}} = \frac{15}{6 \times 10^{-3}}$$

$$= 2.5 \times 10^{-3}$$

$$= 2.5k\Omega$$

$$vi \quad \frac{R_3 \times R_4}{R_3 + R_4} = \frac{3 \times 6}{3 + 6} = \frac{18}{9} = 2k\Omega$$

$$vii \quad \frac{R_2 \times R_{34}}{R_2 + R_{34}} = \frac{1 + 2}{1 + 2} = \frac{3}{3} = 1k\Omega$$

$$R_1 + R_{234} = 3 + 3 = 6k\Omega$$

$$R_T = 6k\Omega$$



$$V_{2.7k\Omega} = -20.297V$$

$$V_{2.7k\Omega} = 20.297V$$

$$V_{2.7k\Omega} = 10.9608V$$

$$f = \frac{50}{2\pi \times 2.7k\Omega} = 2.9041Hz$$

$$I_{50\sin(\omega t)} = 2.7402t$$

$$I_{50\sin(3142t)}$$

Current flow through the 100k Resistor =

$$0.75A \times 20V = 15A$$

$$0.75A \times 10V = 7.5A$$

$$30/40 = 0.75A$$

$$3d \quad 10k + 2k = 30k$$

100
/
②

!!
 $-4.8090V$

$-2.0268 + -2.7822 = -4.8090V$

2c! $35m(94.2.56) = -2.0268$
 $45m(94.2.56 + \frac{1}{2}) = -2.7822$

!!
 ~~$-4.7292V$~~

~~$-2.0268 + -2.7084 = -4.7292V$~~

2c!
 ~~$35m(94.2.56) = -2.0268$~~
 ~~$45m(94.2.56) = -2.7084$~~



Llenwch, plygwch a seliwch (gweler nodyn 2 isod)

CYFENW: _____

ENW(AU) CYNTAF:

12 Tudalen

1. Rhewch yr holl wybodaeth y gofynnir amdani yn y blychau isod.
2. Rhewch eich enw yn y lle a ddarparwyd ar y dde. plygwch ef a'i selio i lawr (gan ddefnyddio'r label a ddarparwyd) i guddio'ch enw.
3. Rhaid i'r atebion fod mewn llawysgrifen ddarlennadwy. Gall yr Arholwyr naill ai anwybyddu sgript annarlennadwy, neu drefnu iddi gael ei theipio a chael yr ymgeisydd i dalu.
4. Ysgrifennwch eich atebion mewn inc.
5. Dechreuwch bob ateb ar dudalen newydd. Gwnewch unrhyw fras nodiadau yn y llyfr atebion a thynnu llinell drwyddynt.
6. Ni ddylid rhwygo unrhyw ran o'r llyfr hwn; rhaid ei gyflwyno yn gyfan.
7. Os defnyddir mwy nag un llyfr, rhwymwch hwy gyda'i gilydd gan ddefnyddio'r tagiau sydd ar gael oddi wrth y gwylwr/gwylwyr.
8. Rhaid dychwelyd pob llyfr. Ni chaniateir mynd â llyfrau atebion, wedi eu defnyddio neu heb eu defnyddio, allan o'r lleoliad arholi o dan unrhyw amgylchiadau.

1	Rhif Myfyriwr	
2	Teitl y Papur Arholiad	
3	Cod y Modwl	
4	Dyddiad ac Amser yr Arholiad	
5	Lleoliad yr Arholiad	
6	Rhif Sedd	
7	Nifer y Llyfrau Atebion a gyflwynwyd	

[illegible]