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

Examination Answer Books

12 Pages

Complete, fold and seal
(see note 2 below)

SURNAME: Davies

FORENAME(S): Hugo Lawrence

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.**

1	Student Number	2225871
2	Title of Examination Paper	
3	Module Code	SGEE4003
4	Date and Time of Examination	15th May 2023 9:30
5	Examination Venue	Graig
6	Seat Number	14
7	Number of Answer Books handed in	

List the numbers of the questions you have attempted	Office Use
A	15
82	0
83.	0
Total	15

15 - Mark confirmed

(Gweler yr ochr arall am y fersiwn Cymraeg)

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

Llyfr Atebion Arholiadau

12 Tudalen

Llenwch, plygwch a seliwch
(gweler nodyn 2 isod)

CYFENW:

ENW(AU) CYNTAF:

Cyfarwyddiadau i Ymgeiswyr

1. Rhowch yr holl wybodaeth y gofynnir amdani yn y blychau isod.
2. Rhowch 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 ddarllenadwy. Gall yr Arholwyr naill ai anwybyddu sgript annarllenadwy, 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 gwyliwr/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	

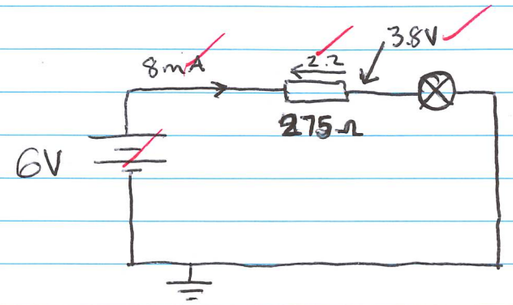
Rhestrwch rifau'r cwestiynau a ymgeisiwyd gennych	At Ddibenion y Swyddfa
Cyfansswm	

(See the other side for English version)

Question No. | Examiner Only

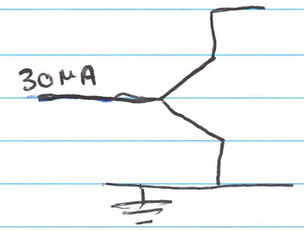
A1 The atomic structure of an intrinsic semiconductor material has ~~3~~4 atoms on its outer shell. it can be doped ~~by~~ by adding extra atoms by combining it with another element with 5 atoms in its outer shell. (2)

A2



275Ω ✗ (1)

A3



$\beta = \frac{I_C}{I_B}$ ✓

$I_E = \beta \times I_B$

$I_E = 90 \times 30 \times 10^{-6} = 2.7 \times 10^{-3}$

$I_E = I_C + I_B$ /

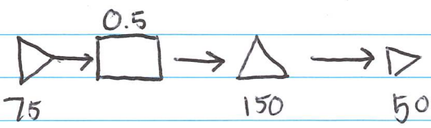
~~2.7mA~~

$2.7 \times 10^{3} + 30 \times 10^{-6}$

$= 2.730 \times 10^{-3}$ A

2.73mA / (4)

A4



✗ (0)

A5 ✗ (0)

Atholwr yn unig | Rhif y Cwestiwn 7

Question No. | Examiner Only

A6 ×

0

A7 ×

0

A8

	Binary	Decimal	Hex
Binary	1000 1101	141 ✓	E1 ×
Decimal	0111 1011	123	C3 ×
Hex	~~0001 0010~~ 0111 0101 ×	~~17~~ 117 ×	B7

2

A9

AB \ CD	00	01	11	10
00	1	1	1	1
01	0	0	0	0
11	0	0	1	1
10	0	1	1	0

$f = \bar{A}\bar{B} + \bar{B}D + ABC$ ✓

6

Athoiwr yn unig | Rhif y Cwestiwn

8

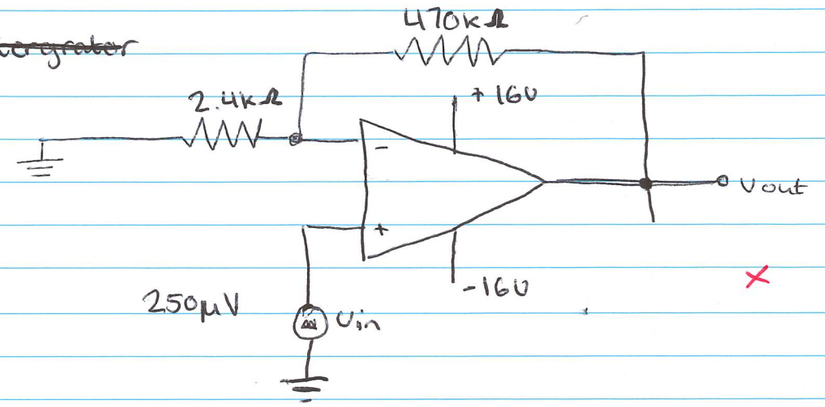
Question No. | Examiner Only

B2 a The 5 main Characteristics

1.
2.
3.
4.
5.

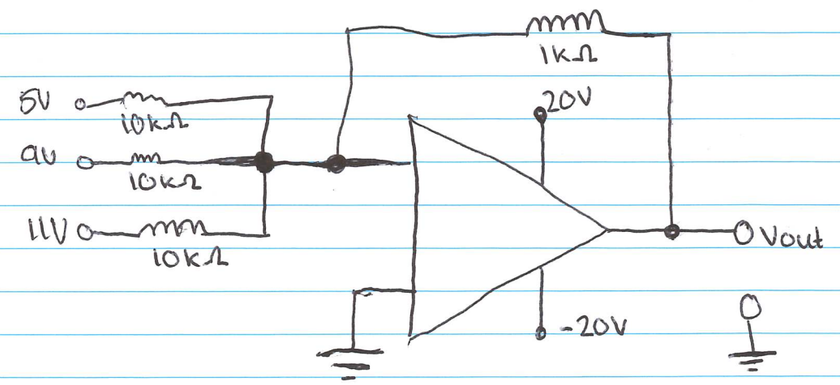
× 0

B2 b ~~integrater~~



× 0

B2 c



Athoiwr yn unig | Rhif y Cwestiwn

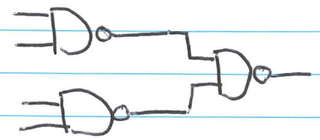
Question No.

Examiner Only

Question No.

Examiner Only

B3a



B3b

J	K	Q	Q+	Comments
0	0	0	0	
0	0	1	1	
1	0	0	1	
1	0	1	1	
0	1	0	0	
0	1	1	0	
1	1	0	1	
1	1	1	0	

Arholwr yn unig

Rhif y Cwestiwn

Arholwr yn unig

Rhif y Cwestiwn