

Llenwch, plygwich a seliwch
(gweler nodyn 2 isod)

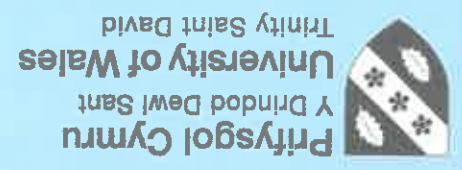
CYFENW:

ENW(AU) CYNTAF:

Llyfr Atebion Arholiadau

Cyfarwyddiadau i Ymgeiswyr

1. Rhwch yr holl wybodaeth y gofynnir amdani yn y blychau isod.
2. Rhwch eich enw yn y lle a ddarparwyd ar y dde, plygwich
et a'i selio i lawr (gan ddefnyddio'r label a ddarparwyd) i
guddio'ch enw.
3. Rhaid i'r atebion fod mewn llawysgriften ddarlennadwy. Gall yr Arholiwr naill ai anwybyddu sgrïpt annarllennadwy, neu drefnu iddi
gael ei theipio a chael yr ymgeisydd i dalu.
4. Ysgriftennwich 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 rhwgo 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 gwyllwrr/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.



12 Tudalen

Cytanawm	
At Ddibenion y Swyddfa	
Rhwystrwch nffau'r cwestiynau a ymgaisych gennyh	

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

(See the other side for English version)



Examination Answer Books

12 Pages

Instructions to Candidates

- Please give the information requested in the boxes below.
- Enter your name in the space provided to the right, fold over and seal down (using the label provided) to hide your name.
- 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.
- Write your answers in ink.
- Begin each answer on a fresh page. Do all rough work in the answer book and cross it through.
- No part of this book is to be torn out; it must be handed in complete.
- If more books than one are used, fasten them together using the tags available from the invigilator(s).
- 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	BAH18837264
2	Title of Examination Paper	Comp. Architecture
3	Module Code	ACCA4022
4	Date and Time of Examination	9 th May, 2023
5	Examination Venue	Gower College Swansea 068860
6	Seat Number	C1
7	Number of Answer Books handed in	

(Gweler yr ochr arall am y fersiwn Cymraeg)

Complete, fold and seal
(see note 2 below)

SURNAME: Bahzad

FORENAME(S): Hassan Ibrahim
Ahmed

List the numbers of the questions you have attempted	Office Use
Q1a	3
Q1b	6
Q1c	2
Q1d	2
Q1e	
Q1f	
Q1g	
Q2a	
Q2b	
Q3a	
Q3b	
Q3c	
Q3d	
Q4	
Total	

1 - 26 ✓
2 - 20 ✓
3 - 24 ✓
4 - 22 ✓
70. 72

h) ~~1111111111111111~~

1b) ~~218 = 11011010~~

1c) ~~9B = 10011011~~

1c) ~~C3 = 11000011~~

1d) ~~D3 = 11010011 = 211~~
~~3B = 00111011 = 59~~

0 0 1 1 1 0 1 1
 128 64 32 16 8 4 2 1
 0 0 0 1 1 0 0 0
 1 1 0 1 1 0 1 0
 1d) 1 1 0 1 0 0 1 1

1a) 24
 - 16
 8
 - 8
 0

1b) 218
 - 128
 90
 - 64
 26
 - 16
 10
 - 8
 2
 - 2
 0

NEXT PAGE

1d) 128+ 32+
 64+ 16+
 16+ 8+
 2+ 2+
 1+ 1+
 211 59

0000 - 0
 0001 - 1
 0010 - 2
 0011 - 3
 0100 - 4
 0101 - 5
 0110 - 6
 0111 - 7
 1000 - 8
 1001 - 9
 1010 - A
 1011 - B
 1100 - C
 1101 - D
 1110 - E
 1111 - F

(Nervous Start)

me in the exam



me after



1a) 00011000

~~1b)~~

128	64	32	16	8	4	2	1
0	0	0	1	0	1	1	1
1	1	0	1	1	0	1	0
1	0	1	0	1	1	0	1
0	0	0	1	1	0	1	1
1	1	0	1	0	0	1	1
0	0	1	1	1	0	1	1

8 bits = 1 byte
 $8 \times 20 = 160$ bits

0000 - 0
 0001 - 1
 0010 - 2
 0011 - 3
 0100 - 4
 0101 - 5
 0110 - 6
 0111 - 7
 1000 - 8
 1001 - 9
 1010 - A
 1011 - B
 1100 - C
 1101 - D
 1110 - E
 1111 - F

8MB =

Please accept my work
 as an answer!

I can't do multiplication
 on paper...



$$\begin{array}{r} R/G/D \\ 8 \times 8 \times 8 = 24 \end{array}$$

Q 1)

a1) $23 = 00010111$

a2) $218 = 11011010$

c) $98 = 10110110$

b1) $10101101 = 173$

b2) $00011011 = 27$

c1) $98 = 10011011$

c2) $13 = 11000011$

d1) $103 = 11010011 = 211$

d2) $38 = 00111011 = 59$

e) 32

f1) $200 * 100 * 24 = \text{Uncompressed file size}$

f2) $\frac{200 * 100 * 24}{10} = \text{Compressed Jpg}$

g) 2 seconds

$1 \text{ MB} = 8 \text{ Mb/s}$

$5 \text{ MB} = 40 \text{ Mb/s}$

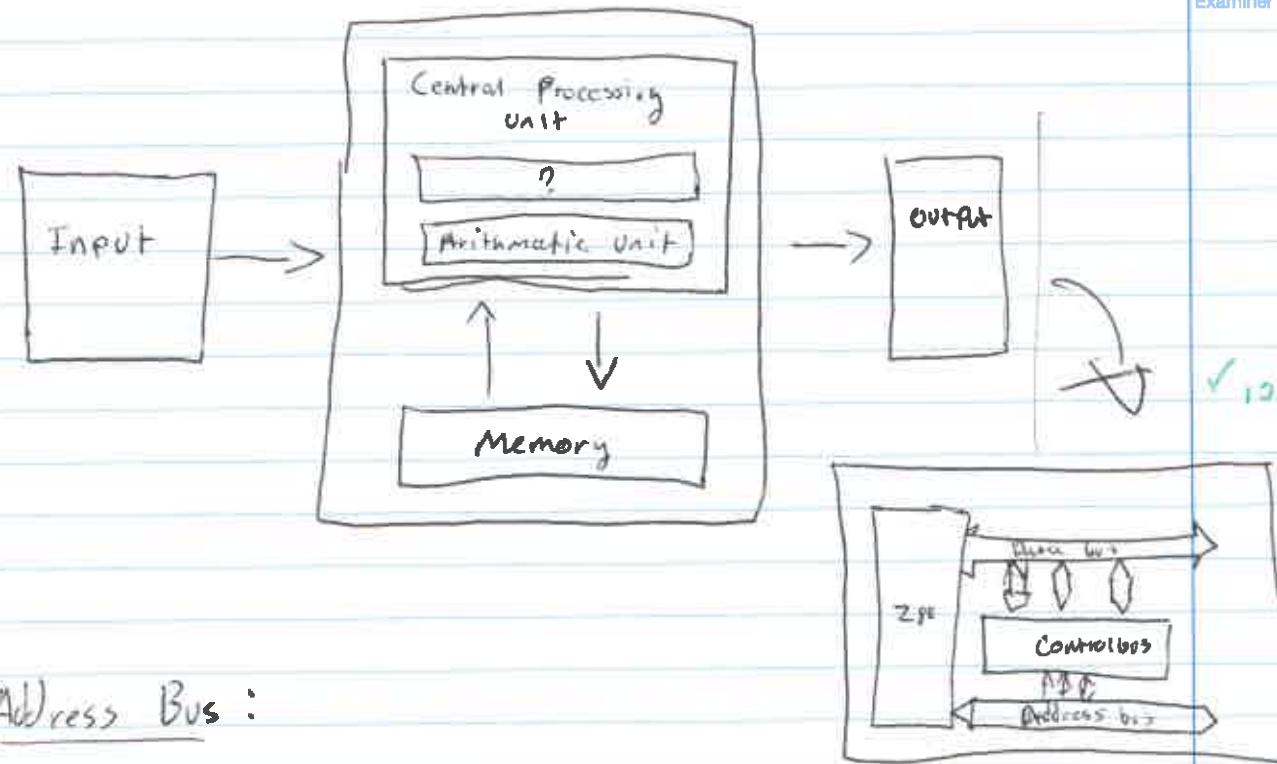
$\frac{40}{20} = 2$

$$\begin{array}{r} 23 \\ -16 \\ \hline 07 \\ -4 \\ \hline 3 \\ -2 \\ \hline 1 \\ -1 \\ \hline 0 \end{array}$$

$$\begin{array}{r} 218 \\ -128 \\ \hline 090 \\ -64 \\ \hline 26 \\ -16 \\ \hline 10 \\ -8 \\ \hline 2 \\ -2 \\ \hline 0 \end{array}$$

$$\begin{array}{r} 128 \\ +64 \\ \hline 192 \\ -16 \\ \hline 176 \\ -2 \\ \hline 174 \\ -1 \\ \hline 173 \end{array}$$

$$\begin{array}{r} 8 \text{ bit} = 256 \\ 7 \text{ bit} = 128 \\ 6 \text{ bit} = 64 \\ 5 \text{ bit} = 32 \end{array}$$

Q2)
a)

✓ 12

b) Address Bus:

The address bus carries the generated addresses given by the CPU. This bus is bi-directional, as it moves in two directions.

Control Bus:

The control bus sends control signals to the other components. This bus can only send signals, not receive them.

Data Bus:

The data bus carries data to and from the memory. This bus is bi-directional, as the data moves back and forth between memory / CPU.

✓ 10

(Q3)

- a) 50MB
- a2) 100GB
- a3) 16GB

- b1) 600MB/s
- b2) 50GB
- b3) 1TB

c) A switch is a device which systems can connect to via ethernet, allowing said systems to communicate / share information.

A Hub is

d) An IP address is given to a system via DHCP on the network. This is so that the network can identify what system is requesting what data.

While a MAC address is given via the system's network card / motherboard (depending if it's integrated).

IP Address example: 192.168.40.0

Mac Address example: 02-1D-E6-01-C2-A1

A mac address can not be changed, unless the network card is swapped out.

✓a

✓2

Q4)

CPU: Intel Core i3

RAM: DDR3 8GB

Storage: 200GB

GPU: One that would allow the system to view HD movies while maintaining the ability to multitask.

Input/Outputs:

Inputs	Outputs
2x USB Ports	1x Monitor
1x Optical Drive	1x Speakers
1x HDMI Port	
1x Keyboard	
1x Mouse	

I selected the i3 CPU as this CPU is good for multitask while doing the tasks mentioned above. An i3 would be fine for the system if each task is done separately.

The Storage amount I selected is what I know to be good for storing word docs, movies or other general files. 200GB can be reduced to 100GB, but, I feel as though 200GB is perfect for the desired tasks.

The RAM I selected is 8GB, DDR3. Knowing that the system will not be undertaking a heavy load from gaming, anything above 8GB would be pointless.

8GB is enough for the mentioned tasks. DDR3 is typically cheaper than DDR4 - DDR6, this was why I chose it.

Network card: 802.11g, with ethernet

Motherboard: One compatible with the RAM + GPU + CPU

Power Supply: One that can power all the components efficiently.

Case: One that fits the components + has needed ports / disc slot.

The network card I selected will allow the user to browse the web freely. Alternatively, a motherboard with an integrated network card would also work.

The ability to use ethernet is optional, so I decided to add one.

I also added an optical drive, this is so DVD's / Disks can be used on the system, (ie movies.)

- END -

"Sorry for the bad handwriting" - Hassan Bakhzad