



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	2241242
2	Title of Examination Paper	Computer Architecture
3	Module Code	ACCA 4022
4	Date and Time of Examination	22.11.23 10:00AM
5	Examination Venue	~~10:00AM~~ Quay Place
6	Seat Number	B1
7	Number of Answer Books handed in	

List the numbers of the questions you have attempted	Office Use
1	~~2~~ 7
2	~~2~~ 4
3	2
4	2
5	~~3~~ 4
6	0
7	~~3~~ 6
Total	~~12~~ 20

(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

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, plynwch ef a'i sellio i lawr (gan ddefnyddio'r label a ddarparwyd) i guddio'ch enw.

1. Rhaid i'r atebion fod mewn llawysgriften ddarlennadwy. Gall yr Arholwyr naill ai anwybyddu sgript annarllennadwy, neu drefnu iddi gael ei theipio a chael yr ymgeisydd i dalu.
2. Ysgrifennwch eich atebion mewn inc.
3. Dechreuwch bob ateb ar dudalen newydd. Gwneuch unrhyw fras nodiadau yn y llyfr atebion a thynnu llinell drwyddynt.
4. Ni ddylid rhwgo unrhyw ran o'r llyfr hwn; rhaid ei gyflwyno yn gyfan.
5. Os defnyddir mwy nag un llyfr, rhwymwch hwy gyda'i gilydd gan ddefnyddio'r tagiau sydd ar gael oddi wrth y gwyliwr/gwyliwyr.
6. 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 amgylchriadu.

[illegible]

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	

(See the other side for English version)

CYFENN:

ENW(AU) CYNTAF:

Llenwch, plygwh a seliwh
(gweler nodyn 2 isod)

I. $(769)_{10} - \text{Binary}$

$$769/2 =$$

$$384 R 1$$

$$192 R 1$$

$$96 R 0$$

$$48 R 0$$

$$24 R 0$$

$$12 R 0$$

$$6 R 0$$

2 not complete

$$\text{Answer} = (0000011)_2$$

II. $(9A2)_{16} = \text{Binary}$

$$9A2/2 =$$

$$4556 R 0$$

$$2278 R 0$$

$$1139 R 0$$

$$569.5 R 1$$

$$284 R 1$$

$$142 R 1$$

$$71 R 1$$

$$\text{Answer} = (1111000)_2$$

III. $(87)_{10} - \text{Octal}$

$$87/2 =$$

$$43 R 1$$

$$21 R 1$$

$$10 R 1$$

$$5 R 1$$

$$\text{Answer} (1111)_8$$

$(5D9)_{16} - \text{Octal}$

$$5149/2 =$$

$$2574 R 1$$

$$1287 R 1$$

$$643 R 1$$

$$321 R 1$$

$$160 R 0$$

$$80 R 0$$

$$\text{Answer} = (00111)_5$$

$(1110101001_2) = \text{Decimal}$

$$10^9 8^7 6^5 4^3 2^1$$

$$1110101001$$

$$1 \times 10^9 = 1$$

$$1 \times 10^8 = 0$$

$$1 \times 10^7 = 0$$

$$1 \times 10^6 = 10$$

$$0 \times 10^5 = 0$$

$$0 \times 10^4 = 0$$

$$1 \times 10^3 = 1000$$

$$0 \times 10^2 = 0$$

$$1 \times 10^1 = 1000000$$

$$0 \times 10^0 = 0$$

$$1 \times 10^9 = 1000000000$$

$$1 \times 10^8 = 100000000$$

$$10 \times 10^7 = 10000000000$$

$$10 \times 10^6 = 100000000000$$

$$\text{Answer} = (1110101001)_{10}$$

$(30E)_{16} = \text{Decimal}$

$$5^6 0^5 1^4 1^3 1^2 0^1$$

$$0 \times 16^1 = 0$$

$$\begin{aligned}
 1 \times 16^2 &= 256 \\
 1 \times 16^3 &= 4096 \\
 1 \times 16^4 &= 65536 \\
 0 \times 16^5 &= 0 \\
 5 \times 16^6 &= 83886080
 \end{aligned}$$

Answer (806420_{10})

$(4278) = \text{Hex}$

$$\begin{aligned}
 4 &= 0100 \\
 2 &= 0010 \\
 7 &= 0111 \\
 8 &= 1000
 \end{aligned}$$

Answer $(010000100111000)_{16}$

$(670)_8 \rightarrow \text{Hex}$

$$\begin{aligned}
 6 &= 0110 \\
 7 &= 0111 \\
 0 &= 0000
 \end{aligned}$$

Answer $(011001110000)_{16}$

Question 2 -

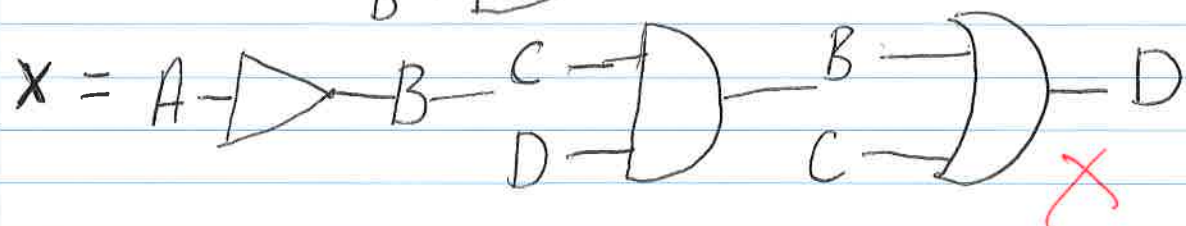
Ram = B ✓
 Ethernet port = C +
 Microphone = F +
 Flash drive = B +
 Gamepad = C ✓

Question 3 -

2

$$\frac{50000}{2.5 \times 10^9} = 2$$

Question 4



Question 5

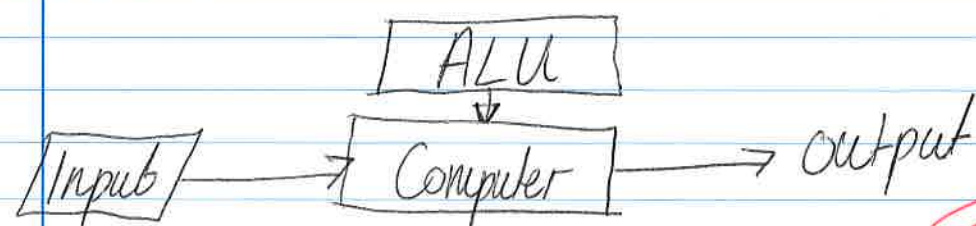
A. Raid is what a computer uses to store data the primary function of Raid is for the computer to control data and process it.

B.

C. One advantage of Raid is it allows computers to store data and process it. One disadvantage of Raid is it can sometimes slow the computer down.

Question 6

Question 7



Question No.

Examiner Only

Question No.

Examiner Only

- B Von neumann architecture allows Computers to run multiple process at one time
- C Von neumann architecture can ~~cause~~ the Cpu to be idle.

1

1

Arholwr yn unig

Arholwr yn unig Rhif y Cwestiwn

Rhif y Cwestiwn

Question No.

Examiner Only

Question No.

Examiner Only

Arholwr yn unig

Arholwr yn unig Rhif y Cwestiwn

Rhif y Cwestiwn