



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	224 2264
2	Title of Examination Paper	COMPUTER ARCHITECTURE
3	Module Code	ACCA - 40 22
4	Date and Time of Examination	22-11-2023 10:00
5	Examination Venue	CR9
6	Seat Number	DS
7	Number of Answer Books handed in	

[illegible]

(Gweler yr ochr arall am y fersiwn Cymraeg)



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

Llyfr Atebion Arholiadau

12 Tüdalen

Cyfarwyddiadau i Yngwaiswyr

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 et a'i selio 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 annarllenadwy, neu drefnu iddi gael ei theipio a chael yr ymgeisydd i dalu.
2. 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.
3. Os defnyddir mwy nag un llyfr, rhwymwch hwy gyda'i gilydd gan ddefnyddio'r tagiau sydd ar gael oddi wrth y gwyllwyr/gwylwyr.
4. Ni ddylid rhwgo unrhyw ran o'r llyfr. hwn; rhaid ei gyflwyno yn gyfan.
5. Dechreuwch bob ateb ar dudalen newydd. Gwnewch unrhyw fras nodiadau yn y llyfr atebion a thynnu llinell drwyddynt.
6. Ysgrifennwch eich atebion mewn inc.

(See the other side for English version)

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

[illegible]

CYFENW:

ENW(AU) CYNTAF:

Llenwch, plynwch a seliwch
(gweler nodyn 2 isod)

QUESTION ①

- CONVERT TO BINARY.

$$(769)_{10} = (110000001)_2$$

769	2
1	384
0	192
0	96
0	48
0	24
0	12
0	6
1	3
1	1
1	0

$$(9A2)_{16} = (100110100010)_2$$

- CONVERT TO OCTAL.

$$(87)_{10} = (127)_8$$

87	8
7	10
2	1
1	0

$$(5D9)_{16} = 5189 =$$

Convert To DECIMAL:

$$(1110101001)_2 =$$

$$\begin{matrix} 9 & 8 & 7 & 6 & 5 & 4 & 3 & 2 & 1 & 0 \\ 1 & 1 & 0 & 1 & 0 & 1 & 0 & 0 & 0 & 1 \end{matrix}$$

$$1 \times 2^9 = 512$$

$$1 \times 2^8 = 256$$

$$1 \times 2^7 = 128$$

$$0 \times 2^6 = 0$$

$$1 \times 2^5 = 32$$

$$0 \times 2^4 = 0$$

$$1 \times 2^3 = 8$$

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

$$0 \times 2^1 = 0$$

$$1 \times 2^0 = 1$$

$$= (937)_{10}$$

$$(50E)_{16} \quad \begin{matrix} 210 \\ 5015 \end{matrix} =$$

$$5 \times 16^2 = 1280$$

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

$$15 \times 16^0 = 15$$

$$= (1295)_{10}$$

$$(1295)_{10}$$

$$5 \times 16^2 = 1280$$

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

$$15 \times 16^0 = 15$$

Convert To HEXADECIMAL.

$$(4278)_{10}$$

	4278	16
6	267	
B	16	
1	1	
1	0	

$$(10B6)_{16}$$

$$(670)_8$$

X O

QUESTION ②

- ① RAM — STORAGE DEVICE ✓
- ② ETHERNET PORT — INPUT DEVICE ✓
- ③ MICROPHONE — OUTPUT DEVICE ✓
- ④ FLASH DRIVE — STORAGE DEVICE ✓
- ⑤ GAME PAD — COMMUNICATION DEVICE ✓

QUESTION ③

50000 INSTRUCTIONS
 DUAL CORE CPU
 2.5 GHz

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

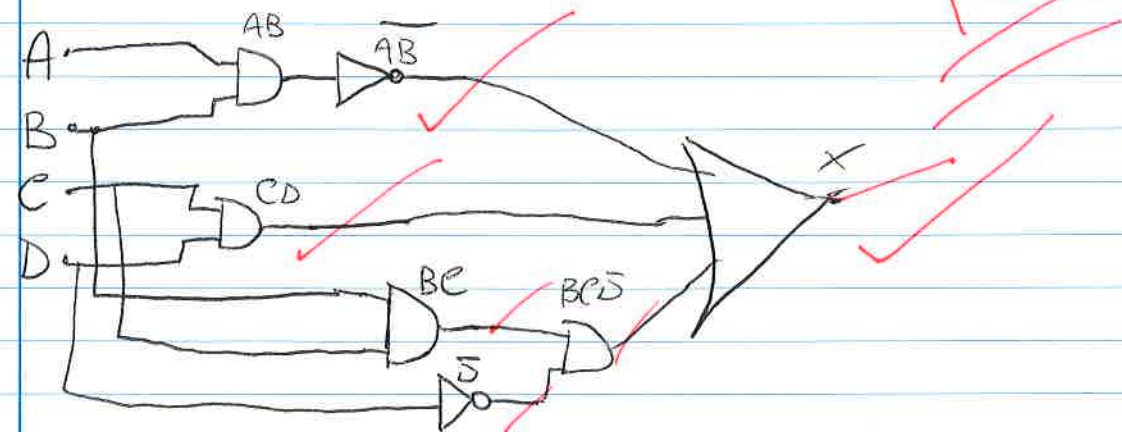
$$\frac{50000}{5} \times 10^{-9} =$$

$$10000 \times 10^{-9} = 10^{-6}$$

$$10 \mu s$$

QUESTION ④

$$X = AB + CD + BC\bar{D}$$



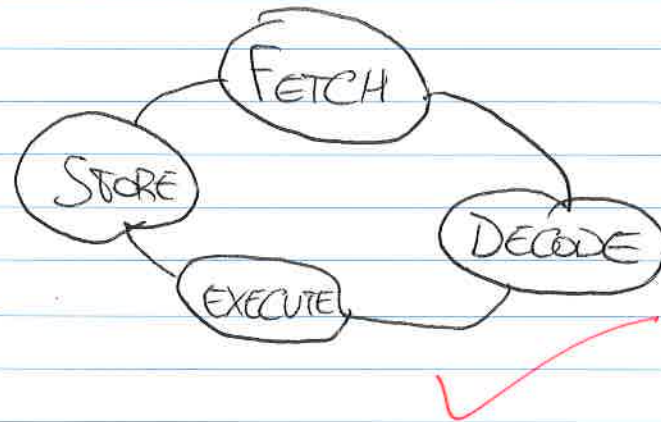
QUESTION 5

- a) EVERY DATA IS SAVED THANKS TO BACK UP +
HIGH COST OF STORAGE -

5

QUESTION 6

a)

3

QUESTION 7

- b) FLEXIBILITY - SIMPLICITY.

1.5

- c) BOTTLENECK - LIMITED PARALLELISM

1.5