

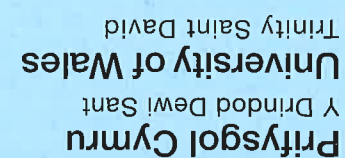


12 Pages

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.**

[illegible]

(Gweler yr ochr arall am y fersiwn Cymraeg)



12 Tudalen

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 seilio i lawr (gan ddefnyddio'r label a ddarparwyd) i guddio'ch enw.

ENW(AU) CYNTAF:

Llenwch, plynwch a selwch
(gweler nodyn 2 isod)

[illegible]

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

(See the other side for English version)

8. Rhaid dychwelyd pob llyfr. Ni chaniau arholi o dan unrhyw amgylchiadau.

7. Os defnyddir mwy nag un llyfr, rhwymwch hwy gyda'i gilydd gan ddefnyddio'r tagiau sydd ar gael oddi wrth y gwyllwyr/gwylwyr.

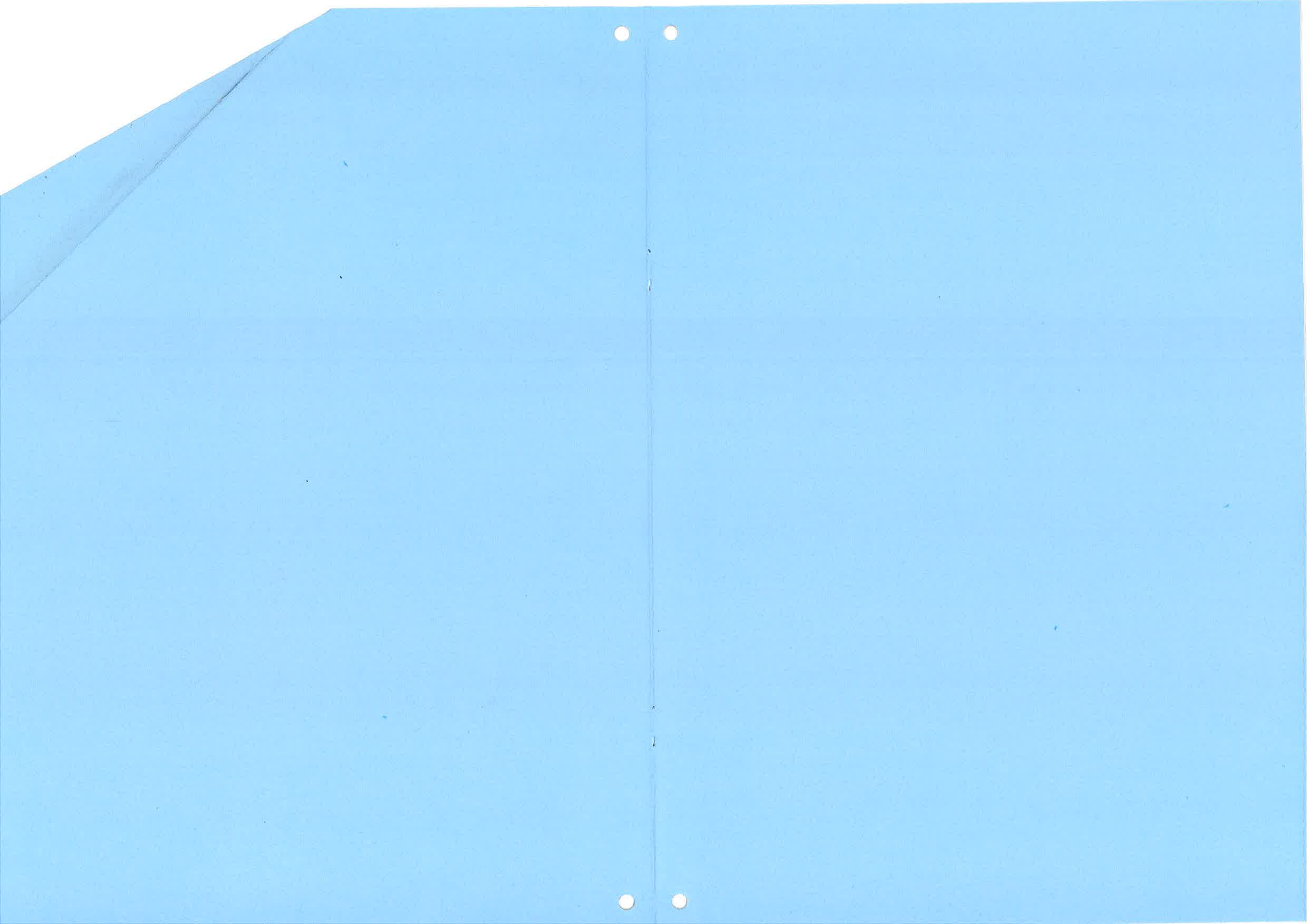
6. Ni ddylid rhwgo unrhyw ran o'r llyfr hwn; rhaid ei gyflwyno yn gyfan.

5. Dechreuwch bob ateb ar dudalen newydd. Gwnewch unrhyw ffras nodiadau yn y llyfr atebion a thynnu llinell drwyddynt.

4. Ysgrifennwch eich atebion mewn inc.

gael ei theipio a chael yr ymgeisydd i dalu.

guddio'ch enw.



Q1

$$; (769)_{10} = 1100000001_2$$

a

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

b (9A2)₁₆

4551		0	8		1
2275		1	4		0
1138		1	2		0
568		1	1		0
284		0	0		1
142		0			
71		0			
35		1			
17		0			

$$= (1000110001110)_2$$

A

(87)₁₀ - octal

$$\begin{aligned} 87 \div 8 &= 10.8 \\ 10 \div 8 &= 1 \end{aligned}$$

$$\begin{aligned} 10.8 \times 5 \\ 1.3 \end{aligned}$$

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

$$5139 \div 8 = 642.3$$

$$642 \div 8 = 80$$

$$80 \div 8 = 10$$

$$10 \div 8 = 1$$

A 16

b 11

c 12

D 13

iii

A) $(1110101001)_2 = (45)_{10}$

$$1 \times 1^1 + 1 \times 2^2 + 1 \times 3^3 + 1 \times 4^4 + 1 \times 5^5 + 1 \times 6^6 + 1 \times 7^7 + 1 \times 8^8 + 1 \times 9^9 + 1 \times 10^{10} = (45)_{10}$$

B

~~$(5D9)_{16}$~~ $5014_{16} = (10)_{10}$

$$1 \times 4^1 + 1 \times 1^2 + 1 \times 0^3 + 1 \times 5^4 = 10^4$$

Q2

A - CPU -

b - Memory - RAM ✓

c - input device - Game Pad, ~~Flash drive~~

D - output device - ~~ethernet~~ Port

e - Storage device - ~~hard drive~~ flash drive ✓

f - communication device - ~~microphone~~

3

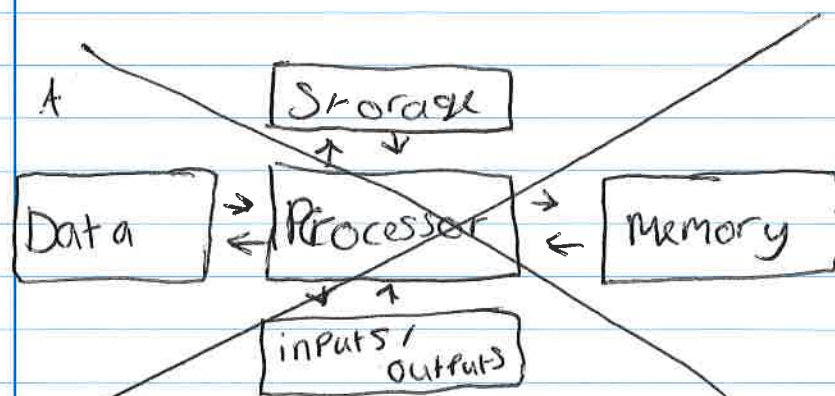
Q3

 $\frac{50,000}{2 \times 2.5 \times 10^9}$ Seconds2 instructions Per
cycleghz = 10^9 2.5 ghz $\frac{50,000}{2.5} \times 10^9$ Seconds

125,000 nano Seconds

$$50000 \times 2.5 \times 10^{-9} = 125,000$$

Q 7



B

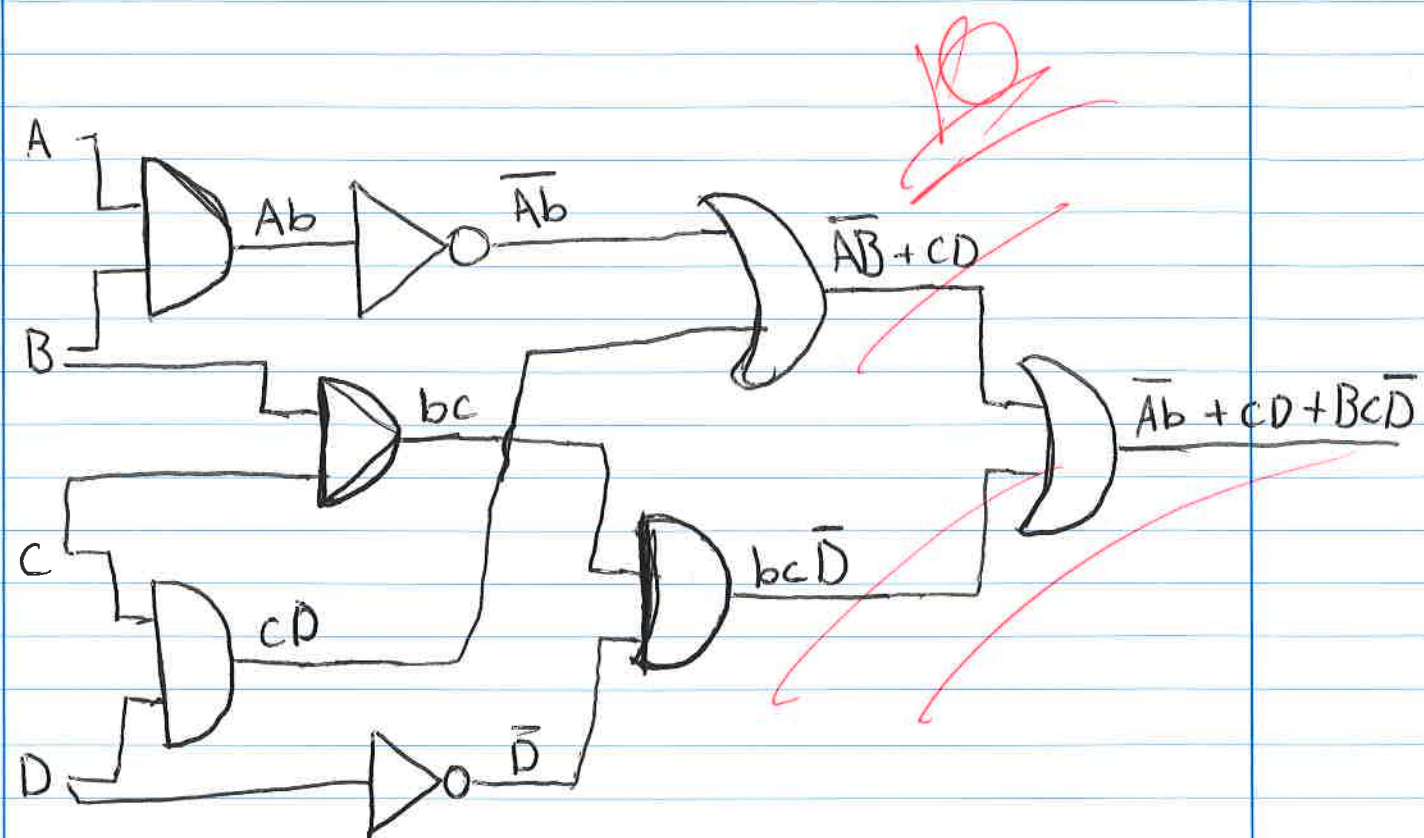
2 advantages of Von Neumann was that it was fast and very efficient.

3

C 2 disadvantages was you were at risk of losing data you inputted.

Q 4

$$x = \overline{A}B + CD + Bc\overline{D}$$



A	B	C	D	$\overline{A}B$	CD	$Bc\overline{D}$
0	0	0	0	1	0	1
1	0	0	0	0	0	1
0	1	0	0	0	0	1
1	1	0	0	0	0	1
0	0	1	0	1	1	1
1	0	1	0	0	1	1
0	1	1	0	0	1	1
1	1	1	0	0	1	1
0	0	0	1	1	1	0
1	0	0	1	0	1	0
0	1	0	1	0	1	1
1	1	0	1	0	1	1
0	0	1	1	1	1	1
1	0	1	1	0	1	1
0	1	1	1	0	1	1
1	1	1	1	0	1	1

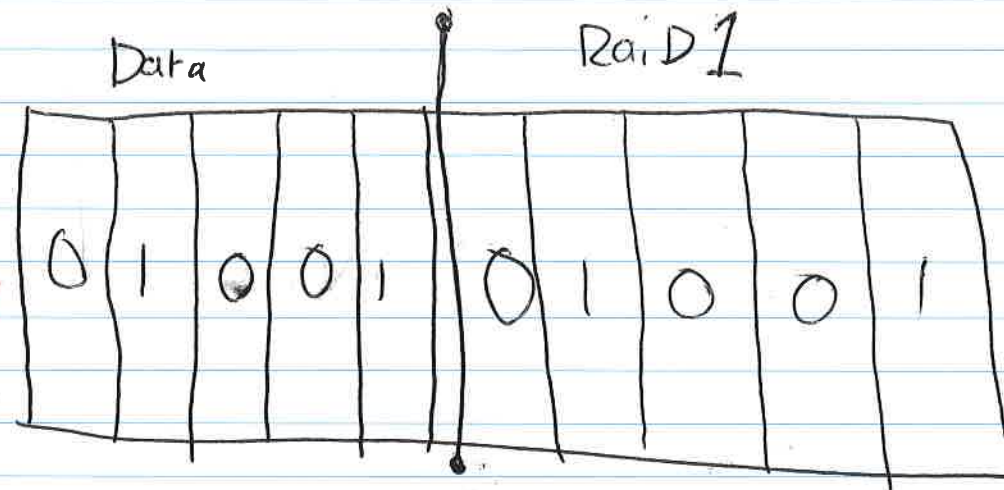
Q5

RAID = Redundant Array of Independent
DISKS

A, RAID is made up of 7 different "RAIDS"
(RAID 0-6).
You can use RAID to backup your data

B,

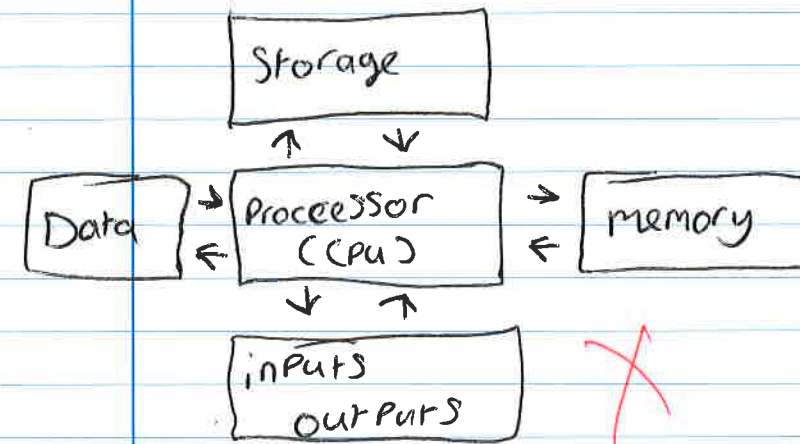
Mirrors the data so allows it to
be backed up



C, one advantage of RAID 1 is that it's mirrored meaning that all data is backed up.

One disadvantage of RAID one is that it's not as fast as RAID 0 and is more expensive.

Q6



Step 1 Fetch - Searches for data and updates what's needed

Step 2 execute -