



12 Tudalen

1. Rhewch yr holl wybodaeth y gofynnir amdani yn y blychau isod.
2. Rhewch 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 ddarlennadwy. Gall yr Arholwyr naill ai anwybyddu sgrïpt annarlennadwy, 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.

[illegible]

(See the other side for English version)

CYFENW:

ENW(AU) CYNTAF:

(Gweler yr ochr arall am y fersiwn Cymraeg)

Office Use	List the numbers of the questions you have attempted
23	1
6	2
6	3
10	4
14	5
12	6
6	7
	Total
	77

8. Every book must be handed in. In no circumstances may answer books, used or unused, be taken out of the examination venue.

7. If more books than one are used, fasten them together using the tags available from the invigilator(s).

6. No part of this book is to be torn out; it must be handed in complete.

5. Begin each answer on a fresh page. Do all rough work in the answer book and cross it through.

4. Write your answers in ink.

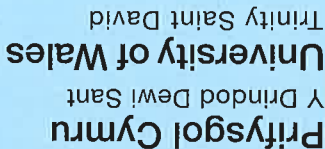
charged to the candidate.

1. Please give the information requested in the boxes below.

Instructions to Candidates

12 Pages

Examination Answer Books



Complete, fold and seal
(see note 2 below)

SURNAME:

FORENAME(S):

Vera

Question One

i) $(263)_{10}$ - Binary

$263 \div 2 = 131 \text{ R } 1$
 $131 \div 2 = 65 \text{ R } 1$
 $65 \div 2 = 32 \text{ R } 1$
 $32 \div 2 = 16 \text{ R } 0$
 $16 \div 2 = 8 \text{ R } 0$
 $8 \div 2 = 4 \text{ R } 0$
 $4 \div 2 = 2 \text{ R } 0$
 $2 \div 2 = 1 \text{ R } 0$
 $1 \div 2 = 0 \text{ R } 1$

$(10000111)_2$

ii) a) $(01110100101110)_2 = (35136)_8$

$290 \div 8 = 36 \text{ R } 2$
 $36 \div 8 = 4 \text{ R } 4$
 $4 \div 8 = 0 \text{ R } 4$

$(442)_8$

c) $(A5E)_{16} \rightarrow \text{octal}$
 $(A5E)_{16} = (10100101110)_2 = (2456)_8$

iii) a) $(111010100100101)_2 = (EA25)_{16}$

iv) $(A6D9)_{16} = \text{to decimal}$

$$10 \times 16^3 + 6 \times 16^2 + 13 \times 16 + 9 \times 1 = 42969$$

$$42969 + 1536 + 208 + 9 = (44713)_{10}$$

4bits 0000 - 16 different unique values

0001
0010
0011
0100
0101
0110
0111
1000
1001
1010
1011
1100
1101
1110
1111

Question two:

- Mouse - 'c' ✓
- Monitor - 'c' ✓
- RAM - 'b' ✓
- Microphone - 'c' ✓
- Ethernet Port - 'f' ✓
- Flash Drive - 'b' ✓
- MODEM - 'f' ✓
- Gamepad - 'd' ✓

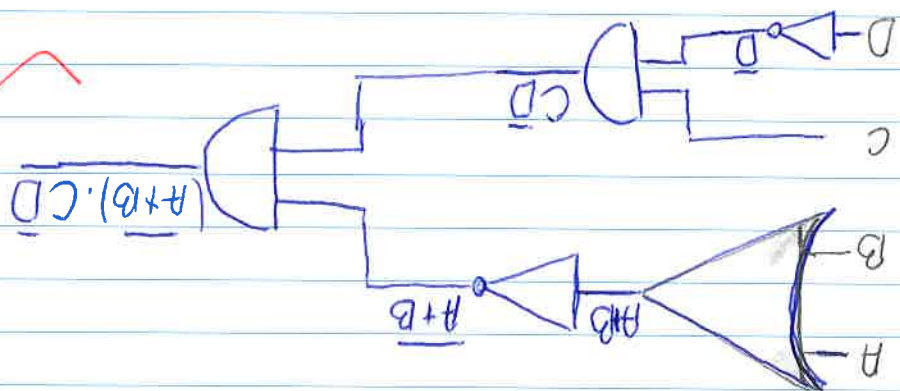
Questions 3

$$2H_2O \times 109 = 218$$

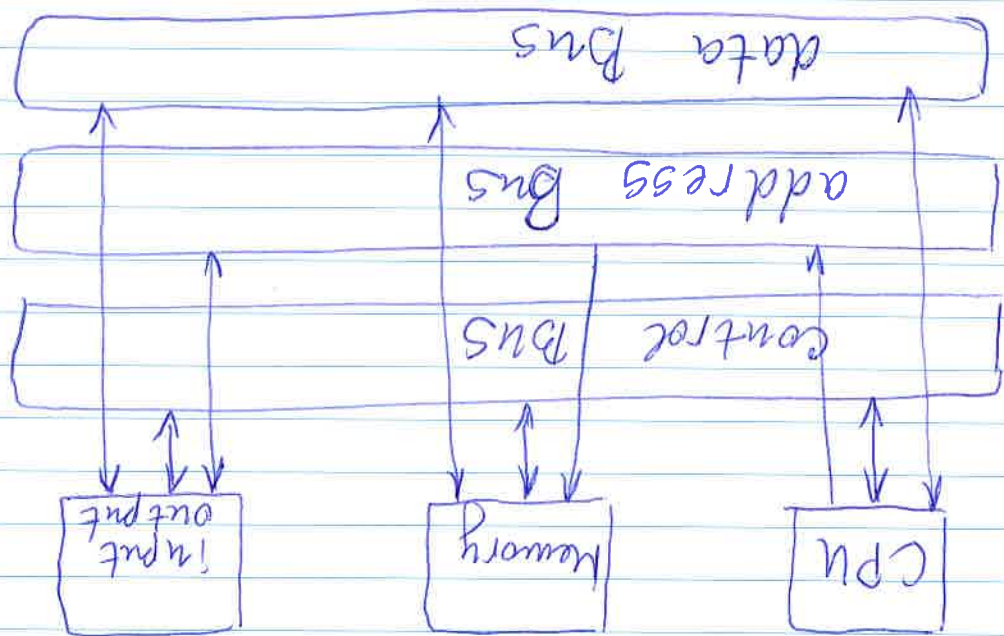
$$6.01 \times 10^{-9} \text{ second} = 2631.6 = 000.01 \times \frac{3.8 \times 10^9}{1}$$

Questions 4

$$\underline{a} \cap (b + t) = \emptyset$$

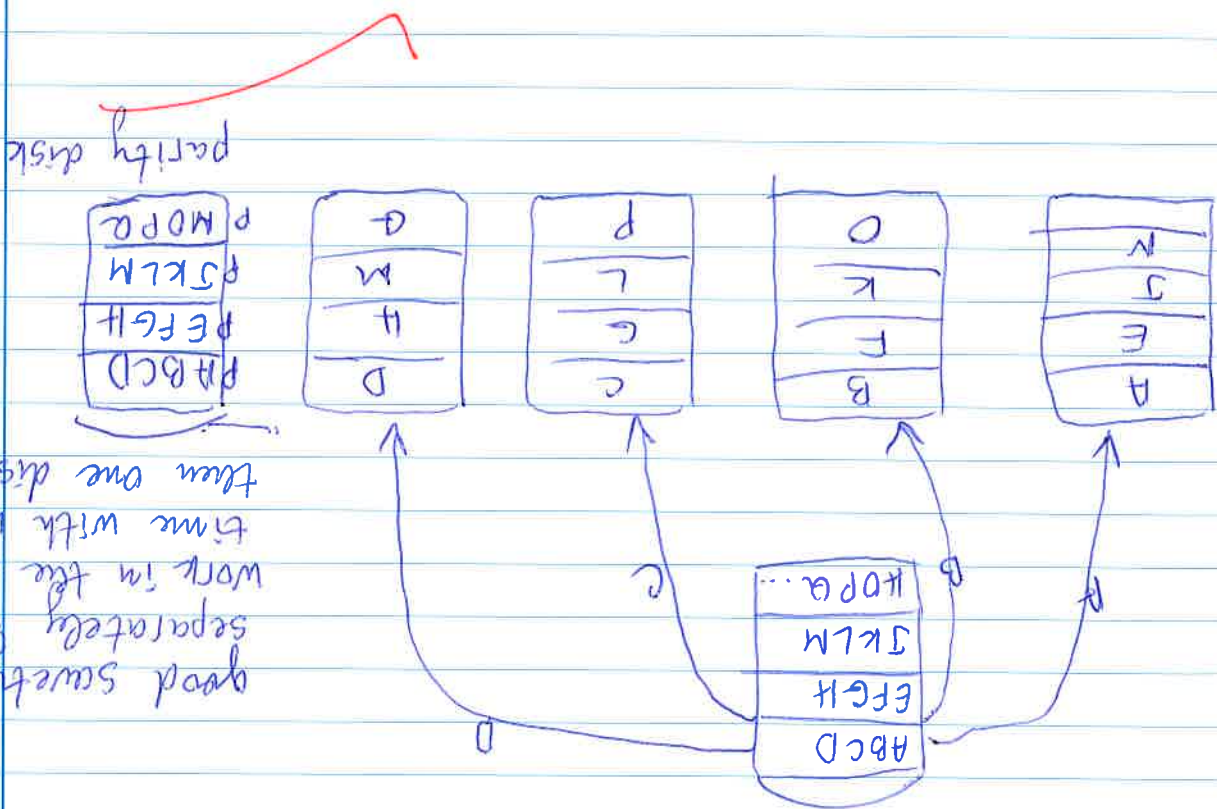


A	B	C	D	A+B	A+B	C.D	(A+B).C.D
1	1	1	1	1	1	1	1
1	1	1	0	1	1	0	0
1	1	0	1	1	0	0	0
1	1	0	0	1	0	0	0
1	0	1	1	1	0	1	0
1	0	1	0	1	0	0	0
1	0	0	1	1	0	0	0
1	0	0	0	1	0	0	0
0	1	1	1	0	1	1	0
0	1	1	0	0	1	0	0
0	1	0	1	0	1	0	0
0	1	0	0	0	1	0	0
0	0	1	1	0	0	1	0
0	0	1	0	0	0	0	0
0	0	0	1	0	0	0	0
0	0	0	0	0	0	0	0



12

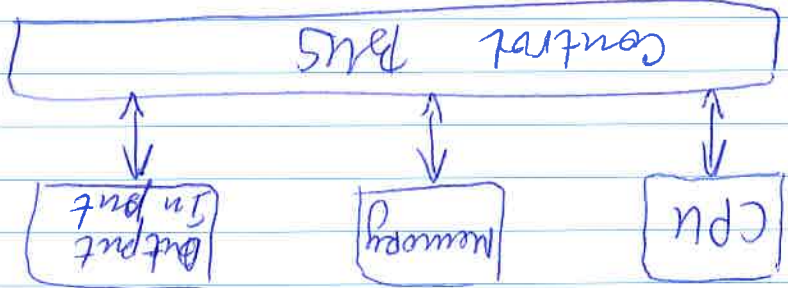
Question six:



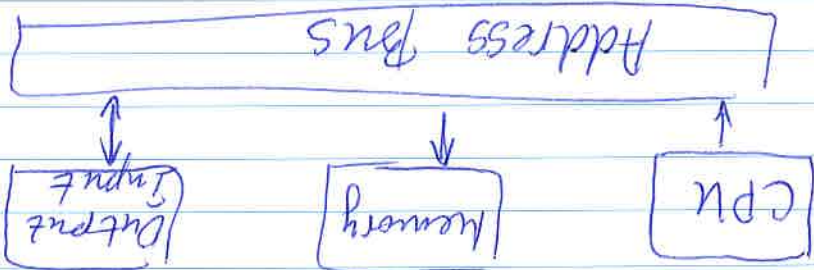
good safety
separately storage
work in the same
time with more
than one disk

RAID 3

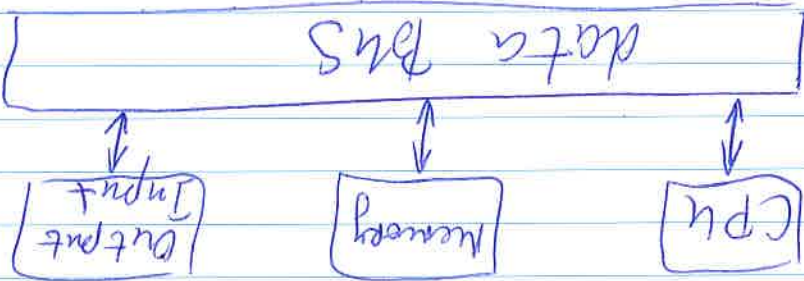
Control Bus is controlling. It works in two ways. Can do few instructions in same time. The buses transfer information.



Address Bus



Data Bus



Question Seven:

Von Neumann architecture

Harvard architecture

named on the name of John von Neumann
simple computer can do 2 things in the same time
3 working one by one the instruction



6