



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

Examination Answer Books

12 Pages

Instructions to Candidates

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 will 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.

Complete, fold and seal
(see note 2 below)

SURNAME: UDON

FORENAME(S): HAFIZ

1	Student Number	1807533
2	Title of Examination Paper	COMPUTER SYSTEMS.
3	Module Code	M4X01500
4	Date and Time of Examination	15-1-19
5	Examination Venue	VIVIAN HALL.
6	Seat Number	G048
7	Number of Answer Books handed in	1

List the numbers of the questions you have attempted	Office Use
Q1	10
Q2	10
Q5	6
Q6	7
Q4	3
Q9	6
Total	42/60

= 70%

(Gweler yr ochr arall am y fersiwn Cymraeg)

Q1

a) $7 = 111$ ✓

b) $12 = 1100$ ✓

c) $100 = 1100100$ ✓

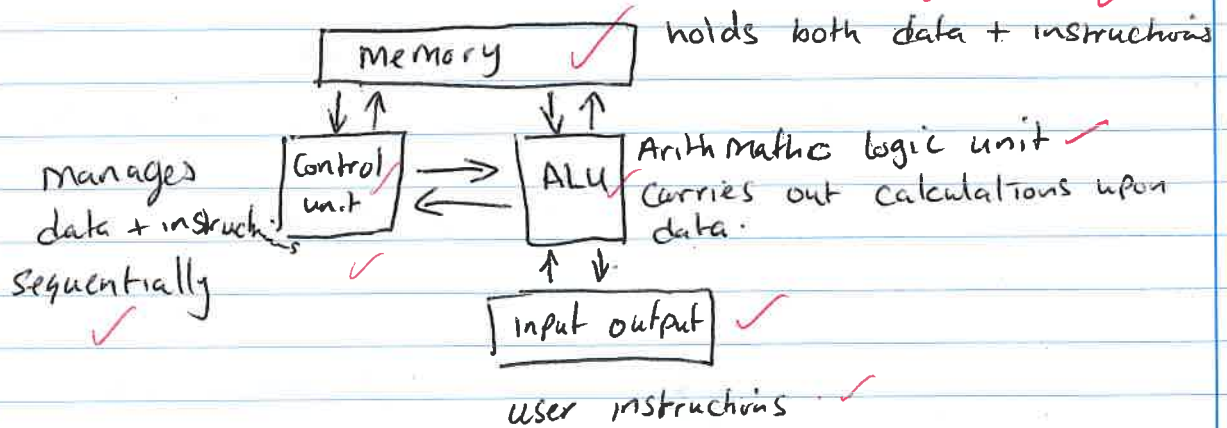
d) $211 = 11010011$ ✓

e) $4096 = 10000000000000$ ✓

10
10
10

Q2/

Von Neumann architecture.



Can carry out either data or instructions.

User sends instructions then the ALU carries out the calculations upon that data then sends to memory and Control unit which execute the instructions and sends it back to the user.

10
10

Q5/ The term for the phenomenon where the same values and storage locations are frequently accessed. ✓

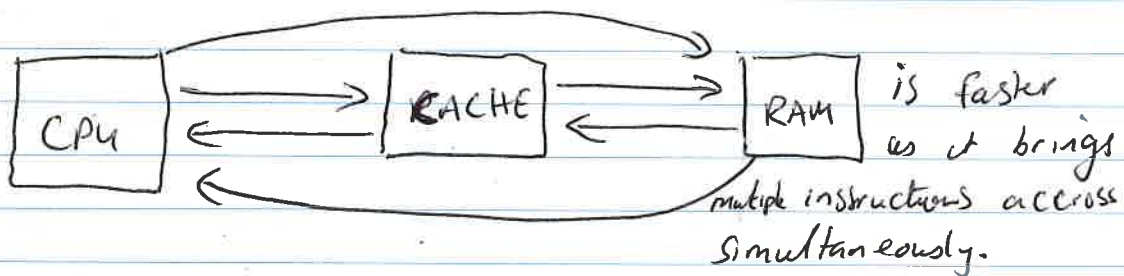
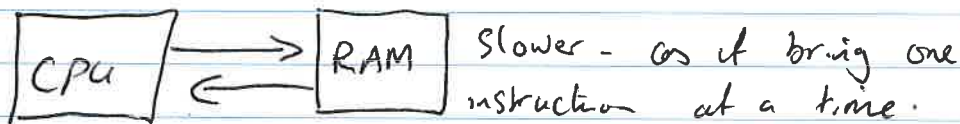
There are two main types of locality of reference -

Temporal locality - The re-use of data values which are accessed frequently on a time basis. ✓

Spatial locality - The re-use of data values of which are relatively close in storage locations. ✓

The principles of locality with Cache memory can enhance the speed of the computer as it can bring multiple instructions across simultaneously. ✓

ish -
not quite



6
10

Q6. Main functions of an operating system (OS).

- Manages memory ✓
- Manages data
- Manages programs ✓
- Manages files ✓
- Security ✓
- Error detection
- Executes (runs) programs ✓
- Manages input and output devices ✓
- Creates programs
- Manages CPU. ✓

7
10

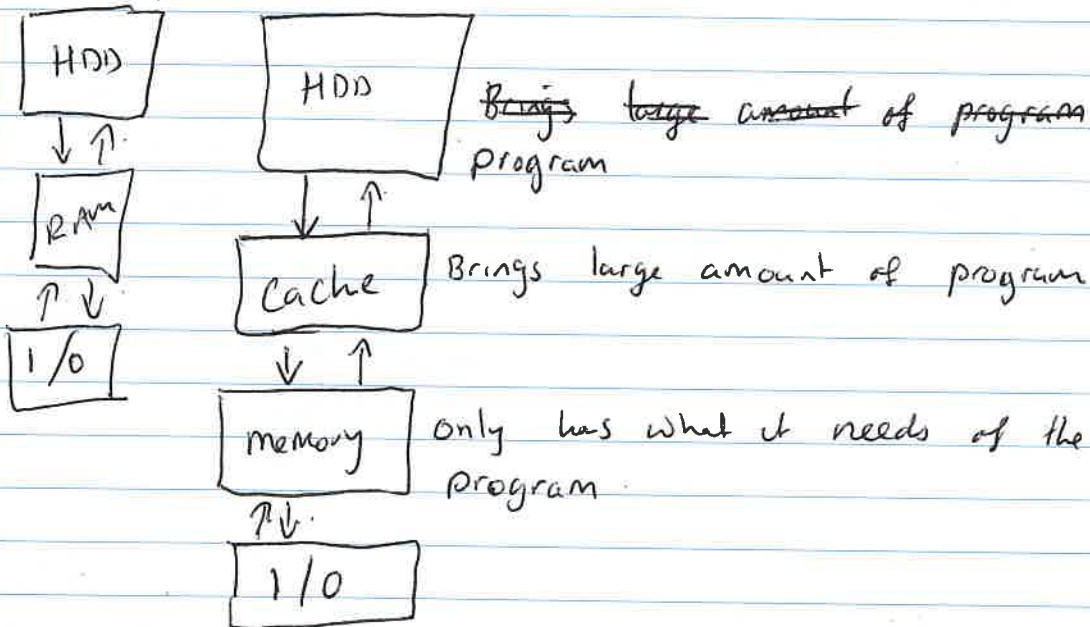
Q4 Pre-emptive scheduler will pre-empt what it thinks

The user is going to use and brings that across at the same time as what it has been cooked ~~to~~ ~~the~~ ~~user~~ to bring.

A priority-based scheduler assigns priorities to each process and the processes with the high priority are processed first - if more than one process has the same priority then it processes on a first come first served basis. - Only brings across what it has been asked. ✓ ok

Priority based Scheduler.

Pre-emptive scheduler.

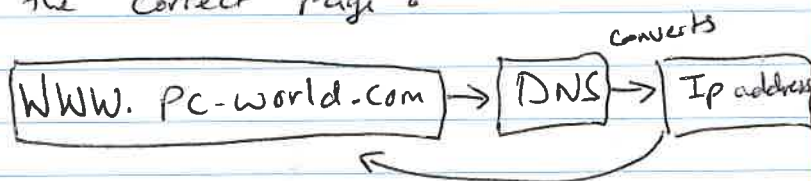


33
10

Q9

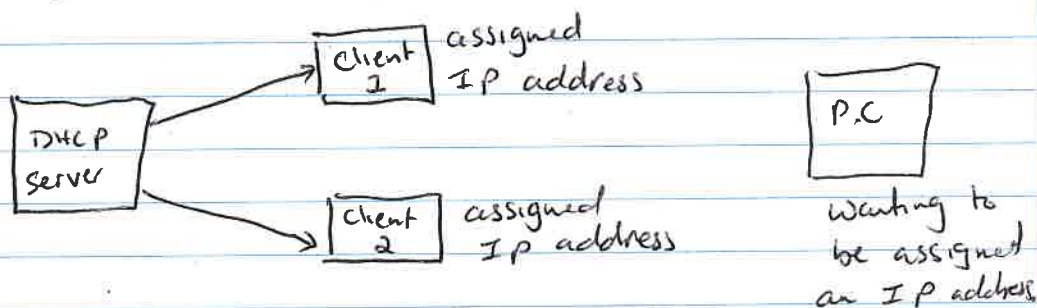
DNS - A computer's equivalent to a phone book.
The DNS converts web addresses into IP addresses, it then sends it back to the user with the correct page.

eg -



DHCP - Where the server on a network assigns IP addresses quickly and dynamically, and has a bank of IP addresses ready to assign to new users joining the network.

eg -



6
10