



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 reject 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	2204792
2	Title of Examination Paper	Computer Architecture And Operating Systems
3	Module Code	ACCIA4022
4	Date and Time of Examination	12/05/2025 09:00
5	Examination Venue	Swansea Trinity St David
6	Seat Number	51
7	Number of Answer Books handed in	1

List the numbers of the questions you have attempted	Office Use
1	0
2	0
3	4
4	4
Total	~~8~~

**Complete, fold and seal
(see note 2 below)**

SURNAME: Evans

FORENAME(S): Evisedd

	Binary	Hex	Decimal
1a	~~0000~~ 0000	~~0000~~ 1	1
	1001	~~1001~~ 2	2
	1010	~~1010~~ 3	3
	1011	~~1011~~ 4	4
	1100	~~1100~~ 5	5
	1101		6
	1110		7
	1111		8
	1000		9
	1001		10
	1010		11
	1011		12
	1100		13
	1101		14
	1110		15

2i	1101 1001	x
2ii	1011 1100	x
bi	24 20	x
bii	8	x
ci	1001 1101	x
cii		
di	113	x
dii		
e	~~4000 x 3000 = 12000~~	

fi $4000 \times 3000 = 12000$?

fii

g $36 / 8 = 4.2$ x

8

16

24

32

40

Q 2
 ai The diagram shows where all the data gets sent through the system bus. Firstly, you can see that the CPU goes through each layer processing the data / information that is being transferred into the system. The memory unit is what ensures that the system has enough storage for the data to stay in the system, and that also gets ran through each of the layers of the system bus. The input and output of the system ensures that the data is being sent to the correct places and output to the right places to make sure it isn't exposed to any threats. The control bus ensures that all the data being stored is being controlled correctly and isn't transferring to areas where it shouldn't. ~~The address bus gives the data~~ ^{and saved} ~~*~~. The Data bus is where the data will be stored to ensure a safe and secure area to avoid any data loss.

aii The overall operating principle of this computer system is to ensure that all inputs ~~with~~ (this can include hardware, data, software etc) is being stored in a safe environment while also ensuring that the inputs aren't corrupted. As an example if the system was to read text from an attached keyboard off of a word document and then saved on to the systems documents folder, this processing method would be used. The system would firstly need to acknowledge the keys that are being used from the keyboard, (the input and output ^{process} system) then they would have to save that document (the memory system will need to check if the system has enough space for the document), it would then get saved on to the system which will then allow the address bus to give the user the location of the file, and it would also then be stored safely on to the data bus. The drive that would normally get stored on to is the C: drive which is very secure when it comes to saving text files.

Q3

ai 5 GB

aii 40 GB

aiii 1 TB

bi

bii

biii

ci Raid 0 would allow the hard drives to work faster but have higher transfer speeds but it is cost effective

cii Raid 1 is commonly used and it is more secure but it is also cost effective

Q4 PLANNING

CPU
£100Monitor
£70PC
£1000RAM
£80Adapter
£1511.65
11501275
1235keyboard
↑Mouse
↑Camera
↑USB
↑Mic
↑keyf40
↑80
701275
80Audio trans
↑Speakers
↑headphones
↑Speakers
↑£50
£4015
135.580
1405

a)

b) 30GB RAM

c)

d) would need enough ports for; mouse, camera, USB, keyboard,

e) would need high speed, high quality

f) on macs imovie, windows illustrate / capcut

Q4

For my video editing workstation I'd want a good CPU, the reason being I need to transfer a lot of videos from my camera and USB, so for that reason I need the computer to be able to handle and process a large amount of transfers. Normally I would say 30GB of RAM would be enough for a typical well functioning computer, but in this case I will be raising the amount of RAM to roughly 50GB. By having more RAM it will allow me to have a lot more space for editing software and will also allow me to have extra storage more freedom when it comes to other types of software I would want on my computer. On my computer I would need at least 7 ports as there is so much equipment needed for video editing. Due to this there are a few ways you can increase the amount of ports on your computer. The cheapest way would be getting a USB adapter that is used to plug any extra cables one or

Q4 equipment needed. On a computer there are typically around 4/5 ports, and they're normally used by a keyboard, mouse, speakers and the monitor. So for extra equipment such as camera cables, microphones, audio interfaces, USB ports etc. I would personally go for the adapters option as you can get them for at least £15. This makes them very cost effective while they're so efficient. The only con ~~had~~ to the adapters is it might clutter your desk with cables but again you can buy cable organisers to keep your workstation clean and to free up space. The features I would need for a suitable graphics card are high rendering, high pixel rate, and good colouring. This would be very useful as the camera I'm using is a 4K camera which allows me to capture very high quality videos. ~~Due~~ Due to the fact the videos being edited are high quality there is a high risk that a low quality graphics card could ~~tarnish~~ tarnish the high quality of the video. For this reason I would be open to spending around £70 - 80 on a good graphics card. There is a wide variety of different softwares that can be used for video editing. If I were interested in buying a Macbook iMovie is already on there and that is a very popular software. For windows Adobe ~~illustrate~~ Premiere is also very good. ~~Due to~~ In my opinion, I do think iOS would be a lot more beneficial when it comes to video editing, but because of the amount of upgrades possible with windows I feel as though Adobe ~~illustrate~~ Premiere would be the better option. Another recommendation I would have is called Capcut. It is a growing popular video editing app that many people are using for social media. It is very cost effective as ~~there are~~ you can download it for free. There are some things you can pay for within the software to get more benefits but if I was interested in a cheaper alternative to Adobe I would most

likely try Capcut. Overall the total would come up to roughly £1500 and that includes the CPU, mouse, keyboard, port adapters, speakers, the computer, monitor etc. ~~It's still~~ I'm still within my budget by around £500 so if there are any more upgrades that need to be considered, or least I have some spare money to follow through with the upgrades.

Lots of words - no real detail

4 4