1.5

SYSTEMS SOFTWARE

TOPIC WISE EXAM QUESTIONS

ANSWERS

GCSE OCR

2023

5	b		1 mark from: • Performs housekeeping actions • Monitor / manage / maintain a computer system • Help the computer run smoothly/efficiently • To diagnose/fix/identify problems with a computer system	1	Do not award example on its own

SAMPLE

9	a		• Orders have been saved onto the system as they order food and then deleted once processed (1) • Once other orders have been made, new files are created (1) which may be bigger than the spaces left by the deleted files (1) • The order files are split up (1)	4 (AO2 1b)	Up to a maximum of 4 marks. A maximum of three marks if there is no contextualisation. Allow a mark if candidates state that fragmentation increases access time. (1)
9	b		• Files on the hard disk drive are moved (1) • Empty spaces collected together (1) • Files are moved to be stored together (1) • Fewer disc accesses are needed (1)	3 (AO1 1b)	Up to a maximum of 3 marks.

2021

2	a		1 mark for name, max 2 for description. e.g. • user interface • allows the user to communicate with the hardware • e.g. GUI/command prompt • allows the user to input data • outputs data to the user • memory management / multitasking • moves data between RAM and VM • gets data from RAM • stores data to RAM • switches between processes so fast it appears like it is multitasking • peripheral management / drivers • allows the installation of drivers to communicate with the peripherals • sends data to/from peripherals • sends data to/from buffers • user management • allows the setting up of accounts • security / setting of password • set different access rights • file management • creation/editing/renaming of files • creation/editing/renaming of folders • movement of files/folders	6	Read whole answer for each. Max 2 for description, 1 mark for name.
2	b	i	Perform housekeeping/maintenance tasks	1	Not by example. Allow optimising system.
2	b	ii	1 mark per bullet to max 3 • full backup will copy every file and all data • incremental will only copy files/data that have changed • …incremental can only be done once a full backup has been completed • …reduces time taken to backup each time • …reduces storage/memory used to backup	3	

5	a		1 mark for each correct word The operating system provides a user **interface**. This displays the output to the user and allows the user to interact with the **hardware**. The operating system controls the movement of data from a hard drive to **RAM** and vice-versa. This is known as memory management. The Operating system can only perform one process at a time, but by managing the memory the computer can appear to be completing more than one process at a time. This is known as **multitasking**. An operating system allows device **drivers** to be installed to allow an external piece of hardware to interact with the **processor**. The operating system provides security through user accounts and **passwords**. It also creates and maintains a file system to organise files and **directories.**	8	BOD hardware with peripherals/processor/printer
5	b	i	1 mark for: • Collate free space together Max 2 from • Collate file fragments together/contiguously • All of **file 1** will be stored **consecutively** • All of **file 2** will be stored **consecutively** • All of **file 3** will be stored **consecutively**	3	Allow diagram Do not award gives more free storage space. Do not award 'similar' files are grouped together.
5	b	ii	1 mark per bullet to max 2 • When one page is read it does not have to search for second page // does not have to search through all the pages // does not need to reassemble the individual pages • Does not have to physically move as far to get the next part of the file • Less physical movement saves time • Multiple locations do not need accessing // fewer individual accesses	2	Answer must relate to why it is faster.
5	b	iii	1 mark for each example e.g. • Backup • Encryption • Compression • Firewall • Anti-virus // anti-malware • Anti-spyware // anti-malware	3	Only award anti-malware once.

2015

4	a		• antivirus • firewall	2	
	b	e.g. • (User name and) password • Only allows you to use the system if you are authorised • Encryption • Prevents hackers from understanding any data if accessed (e.g. passwords) • Access rights • To prevent files from being modified/deleted • User access control • Prevents users from making changes to the system Marks in pairs		4	*Accept any security measure that is provided by the operating system itself but not by standard utility programs (even if the utility program is normally bundled with operating systems).* *The first bullet is for identifying or a brief description of a measure.* *The second bullet is for a further more detailed description or a description of how the measure ensures security.* *Any reasonable biometrics is acceptable.*

EXTRA

	b	Organise the use of (main) memory… …by converting logical addresses to physical addresses Allows programs to share memory / allocate memory… …& protect programs / data from each other Allows programs larger than main memory to run	3	**Examiner's Comments** Most candidates gave correct responses to this, with the majority of those gaining two marks, the most popular answers for this were 'allocates memory' and 'protect programs from each other'.

Question			Answer	Mark	Guidance
2	a	i	- Provide a (user) interface - Manage hardware/peripherals - ~~Manage CPU usage / Handles interrupts~~ - Provide security - Provide platform to run other software - Provide utilities for system maintenance (1 Mark per -, Max 3)	3 (AO1.1)	If candidate names utility software, allow BP6

If you found this useful, drop a follow to help me out!

THANK YOU!

GCST