GCST

1.1.3 INPUT, OUTPUT AND STORAGE

TOPIC WISE EXAM QUESTIONS

A-LEVEL OCR

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SPEC

1.1.3 Input, output and storage	a) How different input output and storage devices can be applied as a solution of different problems. b) The uses of magnetic, flash and optical storage devices. c) RAM and ROM. d) Virtual storage.	Candidates need to have an understanding of a range of input, output and storage devices. Candidates do not need to understand how the input and output devices work, but must be able to recommend appropriate devices for specific situations and be able to justify choices made. Candidates need to understand that there are different types of storage device. They need to know about the characteristics of each type (magnetic, optical and flash) and understand the benefits and drawbacks of each, and be able to recommend an appropriate type of device for a given situation and justify the choice. Candidates need to understand the purpose of ROM and RAM within a computer system, their characteristics, and the role they play in the running of a range of different computers e.g. mobile devices, embedded systems etc. Candidates need to understand why there is a need for virtual storage, how virtual storage works and the benefits and drawbacks of using virtual storage. Virtual storage would be that which may appear to be local but is physically located elsewhere on the network/remotely/in the cloud.

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2023

1 A small manufacturing business uses networked computers with closed source application software installed.

(b) Each computer the business uses has a BIOS.

Tick (✓) **one** box in each row to identify whether each statement in the table is true or false.

Statement	True	False
BIOS stands for Boot Input Output Standard		
The BIOS can be used to alter hardware settings, such as which storage device the computer boots from		
BIOS settings are stored in RAM		

[3]

The business uses virtual storage to hold regular backups of all of its data.

(c) Explain why virtual storage is well-suited for storing backups.

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..... **[2]**

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AS - Level

1 OCRSystems are designing a new CPU for a computer system that will be used for video rendering. Part of the video rendering process is when the video is exported. This is when the computer combines all of the separate video elements together to form the final video.

(e) Before a video is rendered, the user will first capture and edit the individual video elements before they are combined together to form the final video.

(i) State **two** different output devices that could be used when editing the videos.

1 .....

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2 .....

..... **[2]**

(ii)* A storage device is used to store the individual video elements while they are being captured in different locations and during the video editing process.

Discuss the suitability of a flash storage device **and** a magnetic storage device for storing the different video elements while they are being collected and edited.

You should refer to the following in your answer: [9]

- the benefits of each type of storage
- the drawbacks of each type of storage
- the suitability of each type of storage.

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5 Amaya is an amateur photographer and has bought an old second-hand computer to edit her photographs. The specifications of this computer are shown below.

Processor: Dual Core 1.8 GHz
RAM: 1 GB
HDD: 500 GB

(a) State the role of RAM in a computer system.

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..... **[1]**

(b) Explain what is meant by the term 'virtual memory' and why this may be needed when Amaya is editing her photographs.

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..... **[2]**

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2021

1 OCR Insurance uses a computer system to calculate the price that customers pay for car insurance.

(ii) Explain the difference between RAM and ROM, including how these are used by the computer system.

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..... **[4]**

(c)* OCR Insurance's computer system uses secondary storage across the company in servers, client machines and for backup purposes.

For each of these, discuss whether magnetic storage or solid state storage would be most suitable, taking into account the advantages and disadvantages of both. [9]

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2019

1 A company releases an in-home virtual assistant called 'Bertie Butler'.

The device, when placed in a room, listens out for the phrase "Hey Bertie". When someone says that phrase it then listens to the question that follows and tries to give a relevant answer.

Bertie Butler has a number of built-in input and output devices.

(a) Name **one** input device and **one** output device that might be part of Bertie Butler. For each device give a reason for it being built into the virtual assistant.

Input Device Name: .....

Input Device Reason: .....

.....

Output Device Name: .....

Output Device Reason: .....

.....

[4]

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2018

5 A software company is producing software that allows users with severe mobility issues to input data into a computer.

The software flashes up letters on the screen one at a time. The user sends a signal to the computer when the letter they want appears on the screen.

(a) State the name of an input device and describe how it could be used by a user with very limited mobility in their hands and arms to send a signal to the computer.

Device name: .....

How it would be used: .....

.....

.....

[2]

AS - Level

1 A company produces digital photo frames (i.e. photo frames that display digital photographs).

(b) Give **two** reasons why this operating system may be stored in ROM.

1 .....

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2 .....

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[2]

(e) The photo frames can also play video clips. Due to the limited storage on the device the videos are stored on the company's servers (i.e. 'in the cloud') and streamed when needed.

Give **one** disadvantage to the user of using cloud storage for their photos.

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..... **[1]**

(f) The company allows users to connect a local storage device to the photo frame to increase storage capacity.

State the name of **one** device that might be connected to the photo frame to increase storage capacity.

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..... **[1]**

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2017

1 An architect firm specialises in designing skyscrapers.

(ii) Describe what is meant by the term 'RAM'.

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..... [2]

AS - Level

4 A delivery company sends parcels across the UK.

(c) To prove parcels have not been damaged in transit, the delivery drivers use a digital camera to take a photograph of them when they arrive at their destination. The digital camera uses flash memory.

(i) Describe **one** advantage of the digital camera using flash storage rather than magnetic.

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..... [2]

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EXTRA

1. The office workers of a large company each use a stand-alone computer.

The finance manager needs to work on some files at home and also to assess new software for use in the finance department.

State **three** different storage devices that the finance manager would use and describe what each device would be used for.

1

2

3

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3. Computer software is used in Geography lessons to teachstudents about weather systems. [6]

Describe how the following forms of output will be used by the software.

(i) Animation

---[2]

(ii) Interactive presentation

---[2]

4. Intensive Care Units in hospitals are for patients in need of round the clock monitoring and support. Computerised systems can be used to monitor patients' vital signs (temperature, heart rate, blood pressure and breathing). They can then alert medical professionals to any significant changes.

These systems usually run on an embedded, real-time, operating system.

(i) Explain two advantages of this monitoring system having its operating system stored in ROM.

---[2]

(ii) The monitoring system also has RAM. Describe what happens to the contents of RAM and ROM when power to the monitoring system is removed.

---[2]

6. People burn calories as they move around. 'FitFeet' trainers come with an attachable device. This device estimates the calories burnt by the user whilst wearing the trainers. Users can then upload this information to their computers.

The device stores its data on flash memory. Explain why flash storage would be more appropriate than a magnetic hard drive for this device.

---[3]

7. A professional photographer, Sarah, takes and edits photographs for magazines.

Sarah carries around a digital camera and laptop to use on shoots. She keeps extra peripherals in her office that she can use when editing and finalising photographs.

Name an output device Sarah may have in her office and describe what she might use it for.

---[2]

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

THANK YOU!

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