

- 1(a). Vicky has been on holiday and has taken lots of photos. The memory in her camera is now full and she needs to transfer her photos to an external secondary storage device.

Define what is meant by 'secondary storage'.

[1]

- (b). Identify the **three** common storage technologies Vicky can choose from.

[3]

- (c). State **four** characteristics of secondary storage devices that Vicky should consider when choosing a device.

[4]

- 2(a). Apu has a handheld e-book reader that allows him to store and read electronic books.

Types of secondary storage devices are magnetic, optical or solid state.

- i. State which type of storage is most suitable for storing the electronic books inside the e-book reader.

[1]

- ii. Explain **one** reason why this type of storage is the most suitable.

[2]

(b). Apu gets a free e-book on a CD-ROM from a magazine.

- i. Give **two** reasons why a CD-ROM is suitable in this case.

1

2

[2]

- ii. State whether a CD-ROM is magnetic, optical or solid state storage.

[1]

3. A computer has 1024 megabytes of RAM.

How many gigabytes of RAM does the computer have?

[1]

- 4(a). Most computer systems use at least one storage device.

Explain **one** reason why a secondary storage device is needed in most computer systems.

[2]

- (b). * Some secondary storage devices are magnetic and others are solid state.

Describe the characteristics of magnetic and solid state secondary storage.

The quality of written communication will be assessed in your answer to this question.

END OF QUESTION paper

Mark scheme

Question			Answer/Indicative content	Marks	Part marks and guidance
1	a		- Long term/non-volatile storage of data/files - External/auxiliary storage of data	1	1 mark only to be awarded for a correct definition.
	b		- Optical - Magnetic - Solid state	3	1 mark only to be awarded for each correct definition.
	c		Four characteristics from: - Capacity/size - Speed - Portability - Durability - Reliability - Cost	4	1 mark is to be awarded for each correct characteristic to a maximum of 4 marks.
			Total	8	
2	a	i	Solid state	1	
		ii	- Fast access... ... less delays when turning the device on / turning pages etc... - No moveable parts / robust ... can be handled / manipulated / moved without damaging it - Small / light enough... ... to fit within a hand held device - low power ... to extend battery life of reader	2	No follow through from (i). Candidates need to identify a relevant characteristic of solid state storage for the first mark, and expand by explaining why this advantage in an e-book reader for the second mark. Note that portable / capacity are not acceptable answers here (as solid state storage is not particularly more portable / larger than other forms of storage for this application) Examiner's Comments ??In this part, most candidates demonstrated an awareness of the key characteristics of different types of secondary storage. The strongest candidates were able to clearly link the characteristics of solid state storage to the operational requirements of an e-book reader. Centres should encourage candidates to answer such questions positively, for example, by arguing why the characteristics of solid state storage make it most suitable, rather than magnetic and optical storage are not suitable.
	b	i	e.g. - Cheap to produce - Easily portable / Fits in a magazine - Enough capacity for e-books - Can be read by other devices e.g. computers - Read only / can't write over	2	Note that portable / capacity are acceptable answers here (as they are relevant characteristics of a CD ROM) Do not accept "compact" (unless portability is clearly implied) Examiner's Comments In this part, most candidates demonstrated an awareness of the key characteristics of different types of secondary storage. The strongest candidates were able to clearly link the characteristics of solid state storage to the operational requirements of an e-book reader. Centres should encourage candidates to answer such questions positively, for example, by arguing why the characteristics of solid state storage make it most suitable, rather than magnetic and optical storage are not suitable.
		ii	optical	1	
			Total	6	
3			1GB	1	Accept 1.024 The units are not necessary

					Examiner's Comments Was generally well answered.
			Total	1	
4	a				Examiner's Comments It was evident that a majority of the candidates did not understand the term "secondary storage" and we suspect that they guessed (rather than had been taught) that this was some kind of backup storage medium in case the hard drive failed, which is the answer that most gave.
			- To store the files / e.g. operating system - Even when the system is switched off / which must be non-volatile.	2	
	b		<i>Points may include:</i> Magnetic: - Tend to be large capacity, relatively cheap - Sensitive to movement of system due to moving parts - Used as main storage for computers, e.g. to store OS. Solid state - Relatively expensive so tend to be of smaller capacity - No moving parts so not sensitive to movement - Used when portability is important... transferring files, USB keys... or as main storage for PDAs, mobile computers ... as a result, portable magnetic formats (e.g. floppy disks) are no longer used in favour of solid state storage.	6	Examples may have been used to clarify points but are not required for the levels.
			Total	8	

