

1 Is JavaScript a high- or low-level language? Explain your answer.

It's a high-level language as it uses natural language to program

Mnemonic	Instruction
ADD	Add
SUB	Subtract
STA	Stores value from the accumulator to memory
LDA	Loads value from the memory to the accumulator
BRA	Branch always
BRZ	Branch if zero
BRP	Branch if positive
INP	Input
OUT	Output
HLT	End program
DAT	Data location

Explain the difference between the BRA, BRZ and BRP instructions. Describe what the LDA instruction does.

BRA, BRZ and BRP are conditional statements where they branch under different conditions. BRA always branches, BRZ only branches if a value is zero and BRP when a value is positive.

LDA loads the value from the memory to the accumulator

A company releases a utility called RAMStore. The utility creates a virtual storage drive from an area of the computer's RAM.

A company releases a utility called RAMStore. The utility creates a virtual storage drive from an area of the computer's RAM.

(a) Describe what is meant by the term utility software.

.....
Utility software manages the computer system e.g. Firewalls
.....
.....

..... [2]

Give **one** advantage of using RAM as storage in this way.

The RAM is faster than secondary storage
.....

..... [1]

The utility periodically copies what is in the RAM drive to secondary storage, such as a hard disk. Explain why this is necessary.

This is necessary as RAM is a volatile memory so some memory will need

.....
to be moved tot he secondary storage so it is not deleted.
.....
.....

..... [2]

It is important that enough RAM is left for the operating system to use. Describe a technique that allows operating systems to overcome a lack of available RAM.

. It uses virtual memory
.....
.Part of the secondary storage is used instead
.....
.this is a lot slower than using RAM
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....[4]

- Memory contents are divided into pages
 - Pages not needed get moved to virtual memory
 - ✓ Which is an area on a secondary storage device
 - When required the pages are moved from virtual memory back into RAM.
- (1 per -)

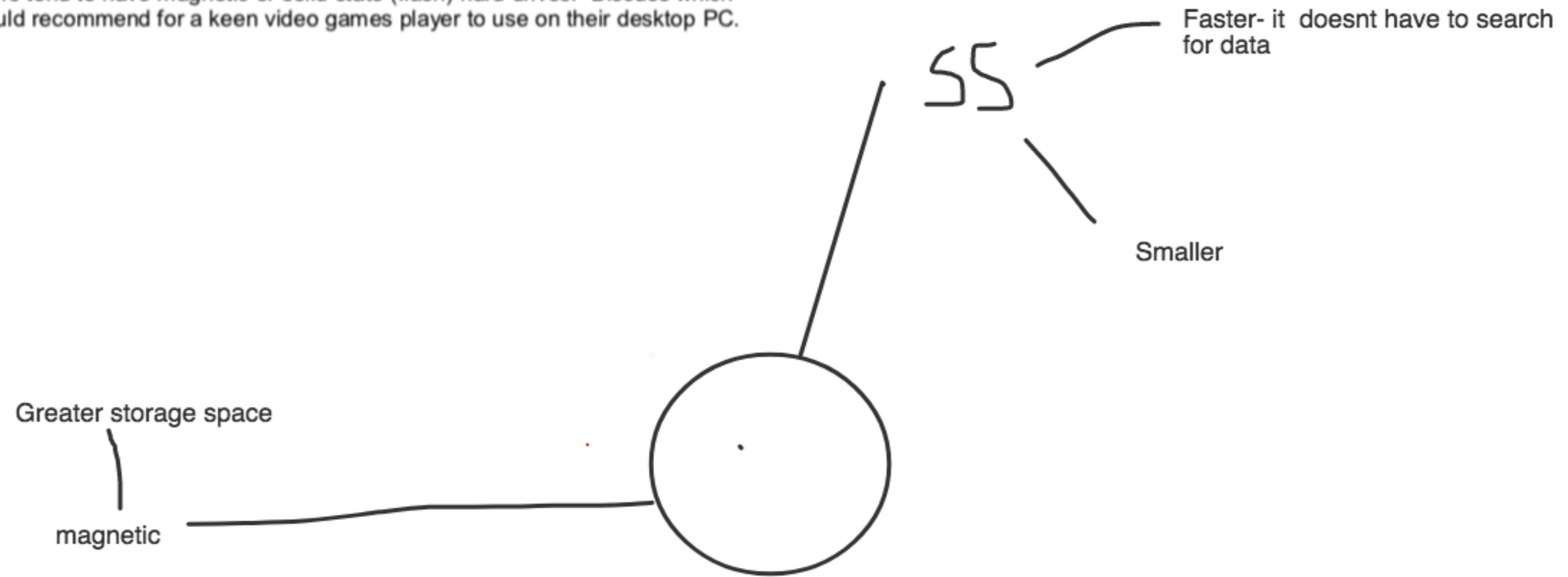
Pages - divides the data into equal sections

Segmentation - divides the data into logical sections

Disk Thrashing

When the cpu has to keep moving pages back and forth from the virtual memory and RAM so much that it causes the system to slow down

* Modern computers tend to have magnetic or solid state (flash) hard drives. Discuss which hard drive you would recommend for a keen video games player to use on their desktop PC.



<p>Mark Band 3–High Level (7-9 marks) The candidate demonstrates a thorough knowledge and understanding of Magnetic and Flash storage. The material is generally accurate and detailed.</p> <p>The candidate is able to apply their knowledge and understanding directly and consistently to the context provided. Evidence/examples will be explicitly relevant to the explanation.</p> <p>The candidate provides a thorough discussion which is well balanced. Evaluative comments are consistently relevant and well-considered.</p>	9	AO1: Knowledge and Understanding
	AO1.1 (2)	The following is indicative of possible factors/evidence that candidates may refer to but is not prescriptive or exhaustive:
	AO1.2 (2)	<ul style="list-style-type: none"> - Magnetic hard drives work by magnetic patterns being read off platters that mechanically spin at high speeds. - Flash hard drives use memory chips. These can have their contents erased and subsequently overwritten when an electrical charge is applied.
	AO2.1	<ul style="list-style-type: none"> - Magnetic hard drives are cheaper per GB and tend to be sold in much higher capacities than flash hard drives. - Flash hard drives tend to have much higher read/write speeds than

9



Mark Scheme

Practice Paper 1

<i>There is a well-developed line of reasoning which is clear and logically structured. The information presented is relevant and substantiated.</i>	(2) AO3.3	<ul style="list-style-type: none"> - magnetic hard disks. - Flash hard disks have no moving parts and therefore tend to have lower power consumption and are not affected by their device moving.
--	----------------------------	---