

7 A student’s computer has primary storage. One example of primary storage is random access memory (RAM).

(a) Identify **one** other example of primary storage.

..... [1]

(b) Explain why RAM is an example of primary storage and **not** secondary storage.

.....
.....
.....
.....
.....
..... [3]

(c) The student is editing a large video file for a project and during this process the RAM becomes full. This makes the computer crash.

Describe how virtual memory could be used in this process to stop the computer crashing.

.....
.....
.....
.....
.....
..... [3]

(d) The computer uses solid-state (flash memory) storage.

(i) Give **two** features of solid-state (flash memory) storage.

1
.....
2
..... [2]

(ii) Give **two** examples of solid-state (flash memory) storage.

1
2 ① [2]

5 A computer uses both random access memory (RAM) and secondary storage.

(a) State the purpose of secondary storage.

.....

..... [1]

(b) One type of secondary storage is optical.

Circle **three** examples of optical storage.

- read only memory (ROM) secure digital (SD) card compact disk (CD)
- hard disk drive (HDD) digital versatile disk (DVD)
- Blu-ray disk universal serial bus (USB) drive solid-state drive (SSD)

[3]

(c) Explain why a computer needs RAM.

.....

.....

.....

.....

.....

..... [3]

(d) The computer processes instructions using the fetch–decode–execute (FDE) cycle.

Draw and annotate a diagram to show the process of the **fetch** stage of the FDE cycle.

9 A company uses both solid-state and optical secondary storage.

(a) Explain why a computer needs secondary storage.

[2]

(b) Describe **three** differences between solid-state and optical storage.

1

2

3

[6]

4 The table contains statements about types of secondary storage.

Complete the table by writing the correct type of secondary storage for each statement.

type of secondary storage	statement
.....	Pits and lands are created on a reflective surface.
.....	NAND or NOR technology is used.
.....	Platters are spun that are divided into tracks and sectors.
.....	Electromagnets are used to read and write data.
.....	Transistors are used as control gates and floating gates.
.....	A red or blue laser is used to read and write data.

[6]

5 A computer uses both random access memory (RAM) and read only memory (ROM).

(a) Tick (✓) **one** box to show which statement is correct about RAM.

- A It is non-volatile storage.

B It stores the bootloader.

C It stores data that is currently in use.

D It is **not** directly accessible by the central processing unit (CPU).
- ☐

☐

☐

☐

[1]

(b) ROM is a type of primary storage.

State the characteristic of ROM that makes it a type of primary storage.

.....

..... [1]

8 Storage can be described as being magnetic, solid-state or optical.

(a) Give **two** features of magnetic storage.

- 1
-
- 2
-
- [2]

(b) Give **three** features of solid-state storage.

- 1
-
- 2
-
- 3
-
- [3]

(c) Give **one** example of each type of storage.

- Magnetic
- Solid-state
- Optical
- [3]

13 Storage and memory are important components of a computer system.

(a) Primary storage is one type of storage in a computer system.

(i) Tick (✓) **one** box to show which is an example of primary storage.

- A

compact disk (CD)

☐
- B

hard disk drive (HDD)

☐
- C

random access memory (RAM)

☐
- D

solid-state drive (SSD)

☐

[1]

(ii) Give **one** characteristic of primary storage.

..... [1]

(b) Virtual memory can be created in a computer system.

Complete the description about virtual memory.

Use the terms from the list.

Some of the terms in the list will **not** be used. Some terms may be used more than once.

- binary

hard disk drive (HDD)

hexadecimal

operating system
- pages

random access memory (RAM)

read only memory (ROM)
- sectors

software

tracks

virtual memory

Virtual memory is used when the is full. It is
created by partitioning the Data is divided into
..... that can be sent from
..... to the
..... to be temporarily stored until they are required.

[5]

3 Secondary storage devices are used to store data in a computer.

(a) Circle **three** components that are secondary storage devices.

central processing unit (CPU) compact disk (CD)

hard disk drive (HDD) random access memory (RAM) read only memory (ROM)

register sensor solid-state drive (SSD)

[3]

(b) Tick (✓) **one** box to show which statement about secondary storage is correct.

- | | |
|---|--------------------------|
| A It is directly accessed by the CPU. | ☐ |
| B It is magnetic storage only. | ☐ |
| C It is used to permanently store software and data files. | ☐ |
| D It is volatile. | ☐ |

[1]