Grade 7 Computing

Unit 1 · Inside the Computer

WORKSHEET

Full marks 35

Name _____ Class _____ Roll no. ____ Date _____ Marks _____ / 35

1 Key words [4]

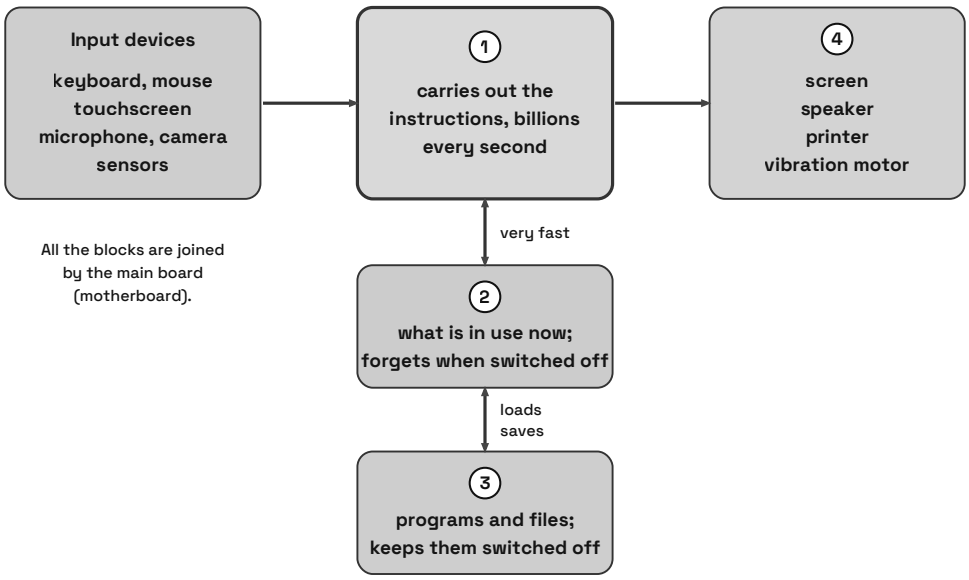
Fill in the blanks with words from the box. Two words in the box are not needed. Each blank carries 0.5 mark.

cores	**driver**	**firmware**	**motherboard**	**port**	**processor**	**RAM**	**sensor**	**Storage**	**volatile**

Every part of a computer is plugged into one large circuit board, the _____. The _____ carries out the instructions of programs, and each of its _____ can follow its own list of instructions. _____ holds what is being used right now, but it forgets everything when the power goes off: it is _____. _____ keeps programs and files even with the power off. A socket where a cable or a device plugs in is a _____. A small program that tells the operating system how to work one kind of device, such as a printer, is a _____.

2 Label the diagram [2]

The diagram is the block diagram of a computer. Write the name of each part numbered 1 to 4. Each carries 0.5 mark.



1. _____ 2. _____

3. _____ 4. _____

3 Multiple choice [5]

Choose the correct option for each of the following questions.

i. Which part carries out the instructions of a program? [1]

a. the motherboard **b.** the storage
c. the processor (CPU) **d.** the power supply

ii. What happens to the data in RAM when a desktop computer's power suddenly goes off? [1]

a. It is saved to storage automatically.
b. It is lost.
c. It stays in RAM until the power comes back.
d. It moves to the processor.

iii. Which of these has moving parts inside? [1]

a. a solid-state drive (SSD) **b.** a pen drive
c. a hard disk drive **d.** a memory card

iv. A phone advert says "6 GB RAM, 128 GB ROM". What is the 128 GB? [1]

a. the phone's processor speed
b. its fast memory that forgets when switched off
c. its storage, where apps, photos and files are kept
d. its battery

v. Music plays while you read a message on a phone with one core. How does the operating system do it? [1]

a. It runs both on the speaker.
b. It gives each app the processor for a tiny turn, one after the other, very fast.
c. It stops the music while you read.
d. It needs a second phone.

4 True or false [3]

Write True or False after each sentence.

i. When you open an app, a copy of it is loaded from storage into memory. ☐

ii. A solid-state drive keeps data on spinning metal platters. ☐

iii. RAM costs many times more for each gigabyte than storage. ☐

iv. A 3 GHz processor is always faster than a 2.5 GHz one. ☐

v. A phone's proximity sensor switches the screen off when you hold it to your ear. ☐

vi. A capacitive touchscreen works with a pencil. ☐

5 Short answers [10]

Write short answers to the following questions.

a. Sita was editing a photo on her family's desktop computer when the power went off. Which of these does she still have when the power returns, and which has she lost? Give a reason for each. [3]

i. the photo as it was before she began editing, saved last week
ii. the changes she made in the last ten minutes without saving
iii. the photo-editing program

b. Name the port you would use for each: i. showing a film from a laptop on a TV; ii. charging a new phone; iii. wired earphones with a thin round plug; iv. a wired connection to the school's router. [2]

c. Name four sensors in a smartphone, and say what each lets the phone do. [2]

d. A game's system requirements are: 4 GB of RAM, 3 GB of free storage, and the operating system's version 12 or newer. Kiran's phone has 6 GB of RAM, 64 GB of storage with 2 GB free, and version 13. Check each requirement. Can he install the game? What could he do? [3]

6 Calculations [5]

Show your working.

a. A processor runs at 2.5 GHz. How many ticks does it make in one second? A blink takes about a tenth of a second: how many ticks does it make while you blink? [2]

Answer: _____

b. Two phones cost Rs 15,000 and Rs 24,000. The cheaper one gets updates for 2 years, the dearer one for 6. If each is used until its updates stop, which costs less for each year of safe use? By how much? [3]

Answer: _____

7 Long answer [4]

Write a long answer to the following question.

A Grade 8 student needs a laptop for typing, spreadsheets and learning to program, for at least four years. Her family can pay Rs 70,000. Here are two laptops.

	Laptop 1	Laptop 2
price	Rs 58,000	Rs 72,000
processor	a recent model, mid-range	a recent model, fast
RAM	8 GB	16 GB
storage	512 GB SSD	512 GB SSD
battery	50 Wh, about 8 hours	45 Wh, about 6 hours
weight	1.5 kg	2.2 kg
ports	USB-A, USB-C, HDMI	USB-C only

Which would you advise, and why? Give at least three reasons.

8 Think [2]

Think, then answer.

A tea shop with four cooks makes four orders at once, but four cooks don't make one cup of tea four times faster. What does this tell you about a processor with more cores? Give one job that more cores help with, and one they don't.

9 Activity: Find the sensors in your phone (not marked)

You need a phone, and someone to call it for the first test. Do each test, write what happened, and name the sensor that did it.

Test	What happened	Which sensor?
During a call, cover the screen near the earpiece		
Open a photo, then turn the phone on its side		
With automatic brightness on, cover the top of the screen for a few seconds		
Open a map with location on, and turn round slowly		