

A-Level Computer Science

Name: _____ Score: _____

1. Which of these is an input device?

- ☐ a scanner
- ☐ a monitor
- ☐ a speaker
- ☐ a printer

2. How does an SSD differ from a magnetic hard disk?

- ☐ it has no moving parts and gives faster random access
- ☐ it uses spinning platters
- ☐ it is always cheaper per gigabyte
- ☐ it stores data as pits read by a laser

3. Which statement is true?

- ☐ RAM is volatile; ROM is non-volatile
- ☐ RAM is non-volatile; ROM is volatile
- ☐ both are volatile
- ☐ both are non-volatile

4. The key difference between a monitoring system and a control system is that a control system:

- ☐ acts on the data through actuators, not just reports it
- ☐ has no sensors
- ☐ cannot read temperature
- ☐ only logs readings

5. A NOT gate outputs 1 when its input is 0.

- ☐ True ☐ False

6. For $X = (A \cdot B) + \overline{C}$ with $A = 1, B = 1, C = 1$, what is X ?

- ☐ 1
- ☐ 0
- ☐ cannot tell
- ☐ 2

7. A pure monitoring system takes action through actuators to change its environment.

☐ True ☐ False

8. How many rows does a truth table have for a circuit with 3 inputs?

9. RAM is volatile (its contents are lost without power), while secondary storage keeps data when the power is off.

☐ True ☐ False

10. How many rows for 4 inputs?

A-Level Computer Science

1. **a scanner**

A scanner brings data in. Monitors, speakers and printers are output devices.

2. **it has no moving parts and gives faster random access**

SSDs store charge in flash transistors — no moving parts, faster and tougher, but dearer per GB and cells wear out.

3. **RAM is volatile; ROM is non-volatile**

RAM loses its contents without power (volatile); ROM keeps them (non-volatile).

4. **acts on the data through actuators, not just reports it**

Both read sensors, but a control system uses the data to act (via actuators), while monitoring only collects and reports.

5. **True**

NOT inverts: $0 \rightarrow 1$ and $1 \rightarrow 0$.

6. **1**

$A \cdot B = 1$, and $\overline{C} = 0$. $X = 1 + 0 = 1$.

7. **False**

Monitoring only collects and reports data — it does not act. Acting through actuators is what makes it a control system.

8. **8**

2^n rows; for 3 inputs, $2^3 = 8$.

9. **True**

That is why your work must be saved to storage — RAM only holds it while the computer is on.

10. **16**

$2^4 = 16$ rows.