1. The ALU in a CPU:

   ☐ performs calculations and logical comparisons

   ☐ stores the running programs

   ☐ connects to the internet

   ☐ sends control signals to other parts

2. Which is an input device?

   ☐ a speaker

   ☐ a projector

   ☐ a barcode scanner

   ☐ a laser printer

3. ROM is volatile and holds running programs, while RAM is non-volatile and holds the boot instructions.

   ☐ True ☐ False

4. Which is true of a MAC address compared with an IP address?

   ☐ they are the same thing written in different formats

   ☐ the MAC address changes on every network the device joins

   ☐ the IP address never changes once a device is made

   ☐ the MAC is fixed to the physical device; the IP is given by the network and can change

5. Which change would improve CPU performance?

   ☐ using a smaller cache so the CPU checks it more quickly

   ☐ lowering the clock speed to reduce overheating delays

   ☐ removing a core so that tasks are not split up

   ☐ increasing the clock speed or the number of cores

6. A capacitive touch screen works by:

   ☐ breaking a grid of infrared light beams across the screen

   ☐ reading a pattern from the finger like a barcode

   ☐ pressing two flexible layers together to complete a circuit

   ☐ sensing the electric charge of your finger

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☐ True ☐ False

8. A MAC address is normally written in denary (base 10).

   ☐ True ☐ False

9. Cache is small, very fast memory near the CPU that holds often-used data, so the CPU waits less than it would reading from main memory.

   ☐ True ☐ False

10. A laser printer fuses toner powder onto paper with heat, an inkjet sprays tiny drops of ink, and a 3D printer builds an object up in layers.

    ☐ True ☐ False

1. **performs calculations and logical comparisons**

   The arithmetic logic unit does the maths and logic; the control unit manages the parts.

2. **a barcode scanner**

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

3. **False**

   False. They are swapped: RAM is volatile and holds the running programs and data, while ROM is non-volatile and holds the start-up (boot) instructions.

4. **the MAC is fixed to the physical device; the IP is given by the network and can change**

   The MAC stays with the device (set by the maker, written in hex); the IP depends on the network and can change.

5. **increasing the clock speed or the number of cores**

   More cores, a larger cache and a higher clock speed all improve performance.

6. **sensing the electric charge of your finger**

   Capacitive screens detect the finger's charge (multi-touch, used in phones); resistive presses layers; infrared breaks beams.

7. **False**

   Virtual memory lets more programs run, but the disk is far slower than RAM; more RAM is faster.

8. **False**

   False. A MAC address is normally written in hexadecimal pairs, such as AC:DE:48:00:11:22.

9. **True**

   A bigger cache, more cores and a higher clock speed all raise performance – cache helps by cutting the wait for data.

10. **True**

    Three different output technologies: laser (toner + heat), inkjet (sprayed ink), 3D (layer-by-layer).

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