

6.2 Robotics

Name: _____ Class: _____ Date: _____

Total: 7 marks

Objective

Build the skills to answer exam questions on **robotics** 机器人技术—the characteristics of a robot, what robots do, and their limitations.

You must be able to:

- give the characteristics of a robot
- give examples of robot roles
- discuss advantages and the key limitation (no independent decisions)

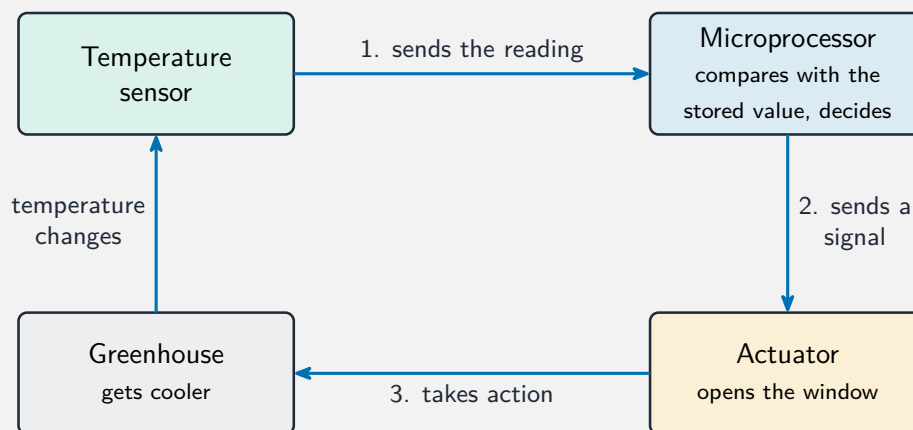
1 Worked examples

■ Robots



A robot has a physical structure, electrical components, and programmable instructions

Image: source



A robot senses, processes and acts in a control loop

- **roles:** factory equipment (welding, moving parts), domestic (robot vacuum).
- **key limit:** a robot cannot think for itself—it only does what it is programmed to do.

2 Practice

2.1 State two characteristics of a robot. [2]

2.2 Give one example of a robot used in the home. [1]

3 Exam-style questions

3.1 A key limitation of a robot is that it: [1]

- A never breaks down
- B cannot make independent decisions
- C works for free
- D gets tired

3.2 A factory uses robot arms on a production line.

(a) State two advantages of using robots here. [2]

(b) State one disadvantage of using robots.

[1]

4 Go further

You are now ready for the real exam questions on this subtopic. Open the **6.2 Robotics** past-paper sheet in the Library, or try these in **Practice mode**:

- 0478/11 N25 —Q5 (robotics)
- 0478/11 J25 —Q8 (robots)

Solutions

2.1 any two of: a physical (mechanical) structure; electrical components; programmable instructions.

2.2 a robotic vacuum cleaner.

3.1 B. A robot cannot make independent decisions.

3.2 (a) any two of: do dull/dangerous jobs; work quickly and accurately; do not tire/bore.
(b) any of: expensive to buy/maintain; can replace human workers; cannot make its own decisions.