

1. An automated system is one that:
 - ☐ senses and responds to its environment with no human intervention
 - ☐ needs a person to make every decision
 - ☐ has no sensors
 - ☐ cannot take any action
2. Which is a defining characteristic of a robot?
 - ☐ it follows programmable instructions that can be changed
 - ☐ it can never be reprogrammed
 - ☐ it has no moving parts
 - ☐ it thinks for itself
3. Artificial intelligence is:
 - ☐ the simulation of human intelligence by computer systems
 - ☐ any program at all
 - ☐ a type of hardware
 - ☐ a network protocol
4. In an automated system, the microprocessor:
 - ☐ compares sensor data with stored values and makes decisions
 - ☐ measures temperature
 - ☐ opens a window
 - ☐ displays the data
5. Which is a typical use of a robot?
 - ☐ welding car parts on a production line
 - ☐ deciding company strategy
 - ☐ writing a novel from scratch
 - ☐ making moral judgements
6. Automated systems can work 24/7 consistently and safely in dangerous places, but they cost more to set up and cope badly with unexpected situations.
 - ☐ True ☐ False

7. A robot uses sensors to gather data and actuators (such as motors) to act on its surroundings.
 - ☐ True ☐ False
8. All AI in use today is narrow AI (good at one specific task); strong AI, with human-like self-awareness, does not yet exist.
 - ☐ True ☐ False
9. Which is a characteristic of an AI system?
 - ☐ it can learn from data and adapt its behaviour
 - ☐ it never changes
 - ☐ it cannot use rules
 - ☐ it stores no data
10. An advantage of using robots is that they:
 - ☐ do dull or dangerous jobs quickly and accurately, without tiring
 - ☐ are always cheap
 - ☐ can react to any new situation
 - ☐ never need maintenance

1. senses and responds to its environment with no human intervention

Automated systems work on their own, sensing data and acting on it.

2. it follows programmable instructions that can be changed

A robot has a physical body, electronics, and a changeable program — it can be reprogrammed for a new job.

3. the simulation of human intelligence by computer systems

AI is a computer doing tasks that normally need human thinking.

4. compares sensor data with stored values and makes decisions

The microprocessor decides; the sensor measures and the actuator acts.

5. welding car parts on a production line

Robots excel at repetitive physical tasks like welding or vacuuming; they don't make independent judgements.

6. True

Consistency and safety are the strengths; setup cost and inflexibility (no judgement for the unexpected) are the trade-offs.

7. True

Sense, process, then act.

8. True

A chess engine or a recommender is narrow AI; a self-aware, general mind (strong AI) remains theoretical.

9. it can learn from data and adapt its behaviour

AI collects data + rules, reasons, draws conclusions, learns and adapts.

10. do dull or dangerous jobs quickly and accurately, without tiring

Robots are fast, accurate and tireless on dull/dangerous tasks, though they are costly and inflexible.