

# Artificial intelligence

## Robots

(practical part)



**N1 Read these definitions and complete the extracts with the appropriate words:**

**Androids** are anthropomorphic robots designed to look and behave like a human being. Most android can walk, talk and understand human speech. Some react to gestures and voice inflection. Some 'learn' from the environment: they store information and adapt their behavior according to a previous experience.

**Expert systems** is the term given to computer software that mimics human reasoning, by using a set of rules to analyze data and reach conclusions. Some of them help doctors diagnose illnesses based on symptoms.

**Neural networks** are a new concept in computer programming, designed to replicate the human ability to handle ambiguity by learning from trial and error. They use silicon neurons to imitate the functions of brain cells and usually involve a great number of processors working at the same time.

The term (1) ..... Is defined as the automation of intelligent behavior, but can (2) .... really be intelligent?

(3) .....are made of units that resemble neurons. They are often used to simulate brain activity and are effective at predicting events. (4)....., also known as knowledge-based systems, mirror the structure of an expert's thought.



**N2** Watch the video <https://www.youtube.com/watch?v=4o0FZalxIYw> and describe the robots from the video:

- Which robot do you like more and why?
- Do you think these robots can be dangerous?
- Can we say that they are cute?
- Would you like to have similar robots?

1. Подпиши названия частей лица и туловища робота.



### N3 Insert the appropriate words from the text:

#### Robots and automata

A robot is a computer-programmed machine, that performs actions, manipulates objects in a precise and, in many cases, repetitive way.

Robots can be automata, or man-like machines, whose components are similar to a human body.

They have mechanical links, joints, which connect their movable parts.

Their heart and muscles are the electric or pneumatic motors or systems, the actuators, which create the movement.

Robots also have hands, usually tools or grippers, called end effectors.

They can be equipped with camera or infrared control, sensors, which transmit information to the central system in order to locate objects or adjust movements.

Finally, robots depend on a computer system, the brain that directs the actions.

Scientists are working on a machine which they hope will recognize objects with cameras that will work as (1)....., and retrieve objects with an arm that will be its (2)..... . Although the arm will have (3) ..... that will link its muscles and an electric motor that will be the (4) ....., this new (5) ..... won't move like a human, i.e. it won't be like the (6) ..... of science-fiction films: forget "Star wars". It will be desk based: no walking, or climbing stairs. The team hopes to discover how the brain perform 'multi-tasking' and to use that information to develop the (7) ..... to create a robot that can think for itself.

### N4 Make a list of other uses of robots at home and at work.



## N5 Answer Artificial Intelligence questions:



1. Nils Nilsson headed a team at SRI that created a mobile robot named:  
a) Robotics    b) Dedalus    c) Shakey    d) Vax
2. An Artificial Intelligence technique that allows computers to understand associations and relationships between objects and events is called:  
a) heuristic processing    b) cognitive science    c) relative symbolism    d) pattern matching
3. The new organization established to implement the Fifth Generation Project is called:  
a) ICOT (Institute for New Generation Computer Technology)  
b) MITI (Ministry of International Trade and Industry)  
c) MCC (Microelectronics and Computer Technology Corporation)  
d) SCP (Strategic Computing Program)
4. The field that investigates the mechanics of human intelligence is:  
a) history    b) cognitive science    c) psychology    d) sociology
5. What is the name of the computer program that simulates the thought processes of human beings?  
a) Human logic    b) Expert reason    c) Expert system    d) Personal information
6. What is the name of the computer program that contains the distilled knowledge of an expert?  
a) Database management system    b) Management information System  
c) Expert system    d) Artificial intelligence

## **N6 Put in little / a little / few / a few.**

- 1 Gary is very busy with his job. He has ..... time for other things.
- 2 Listen carefully. I'm going to give you .....advice.
- 3 Do you mind if I ask you..... questions?
- 4 It's not a very interesting place, so .....tourists visit.
- 5 I don't think Amy would be a good teacher. She has .....patience.
- 6 'Would you like milk in your coffee?' 'Yes,..... , please.'
- 7 This is a boring place to live. There's..... to do.
- 8 I know Hong Kong quite well. I've been there..... times.

## **N7 Read the situations and complete the sentences using the present perfect. Choose from these verbs:**

***break disappear go up grow improve lose shrink stop***

- 1 Tom is looking for his key. He can't find it. Tom ..... his key.
- 2 Maria's English wasn't very good. Now it is better. Her English .....
- 3 My bag was here, but it isn't here any more. My bag .....
- 4 Lisa can't walk and her leg is in plaster. Lisa .....
- 5 Last week the bus fare was £1.80. Now it is £2. The bus fare .....
- 6 Dan didn't have a beard before. Now he has a beard. Dan .....
- 7 It was raining ten minutes ago. It isn't raining now. It .....
- 8 I washed my sweater, and now it's too small for me. My sweater .....