

Q 1- Multiple Choice questions

1. A technique that was developed to determine whether a machine could or could not demonstrate the artificial intelligence known as the___

- a. Boolean Algebra
- b. Turing Test
- c. Logarithm
- d. Algorithm

Answer: b. Turing Test

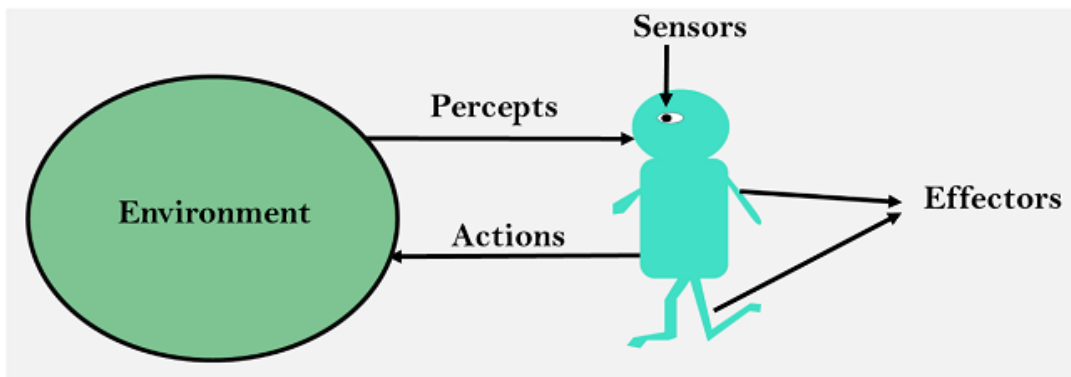
Explanation: In the year 1950, mathematician and computing pioneer **Alan Turing** introduced a test to determine whether a machine can think like a human or not, which means it can demonstrate intelligence, known as the **Turing Test**. It was based on the "**Imitation game**" with some modifications. This technique is still a measure of various successful AI projects, with some updates.

2. An AI agent perceives and acts upon the environment using___.

- a. Sensors
- b. Perceiver
- c. Actuators
- d. Both a and c

Answer: d. Both a and c.

Explanation: An AI agent perceives and acts upon the environment using Sensors and Actuators. With Sensors, it senses the surrounding, and with Actuators, it acts on it.



3. The PEAS in the task environment is about_____.

- a. Peer, Environment, Actuators, Sense
- b. Performance, Environment, Actuators, Sensors
- c. Perceiving, Environment, Actuators, Sensors
- d. None of the above

Answer: b. Performance, Environment, Actuators, Sensors

Explanation: PEAS is a representation model on which an AI agent works. It is made up of four words:

o P: Performance

o E: Environment

o A: Actuators

o S: Sensors

4. The main tasks of an AI agent are_____.

- a. Input and Output
- b. Moment and Humanly Actions
- c. Perceiving, thinking, and acting on the environment
- d. None of the above

Answer: c. Perceiving, thinking, and acting on the environment

Explanation: The AI agent is the rational agent that runs in the cycle of Perceive, think, and act.

5. The best AI agent is one which_____

- a. Needs user inputs for solving any problem
- b. Can solve a problem on its own without any human intervention
- c. Need a similar exemplary problem in its knowledge base
- d. All of the above

Answer: b. Can solve a problem on its own without any human intervention

Explanation: The best AI agent is one that can solve the problem on its own without any human intervention.

Q2:- Short Question-Answers

a. Define three domains of Artificial Intelligence with examples?

b. Explain the history of Artificial Intelligence?

- **1950:** Alan Turing published “Computer Machinery and Intelligence” which proposed a test of machine intelligence called The Imitation Game.

- **1952:** A computer scientist named Arthur Samuel developed a program to play checkers, which is the first to ever learn the game independently.
- **1955:** John McCarthy held a workshop at Dartmouth on “artificial intelligence” which is the first use of the word, and how it came into popular usage.
- **1958:** John McCarthy created LISP (acronym for List Processing), the first programming language for AI research, which is still in popular use to this day.
- **1959:** Arthur Samuel created the term “machine learning” when doing a speech about teaching machines to play chess better than the humans who programmed them.
- **1961:** The first industrial robot Unimate started working on an assembly line at General Motors in New Jersey, tasked with transporting die casings and welding parts on cars (which was deemed too dangerous for humans).
- **1965:** Edward Feigenbaum and Joshua Lederberg created the first “expert system” which was a form of AI programmed to replicate the thinking and decision-making abilities of human experts.
- **1966:** Joseph Weizenbaum created the first “chatterbot” (later shortened to chatbot), ELIZA, a mock psychotherapist, that used natural language processing (NLP) to converse with humans.
- **1968:** Soviet mathematician Alexey Ivakhnenko published “Group Method of Data Handling” in the journal “Avtomatika,” which proposed a new approach to AI that would later become what we now know as “Deep Learning.”
- **1973:** An applied mathematician named James Lighthill gave a report to the British Science Council, underlining that strides were not as impressive as those that had been promised by scientists, which led to much-reduced support and funding for AI research from the British government.
- **1979:** James L. Adams created The Stanford Cart in 1961, which became one of the first examples of an autonomous vehicle. In ‘79, it successfully navigated a room full of chairs without human interference.
- **1979:** The American Association of Artificial Intelligence which is now known as the Association for the Advancement of Artificial Intelligence (AAAI) was founded.
- **1980:** First conference of the AAAI was held at Stanford.
- **1980:** The first expert system came into the commercial market, known as XCON (expert configurer). It was designed to assist in the ordering of computer systems by automatically picking components based on the customer’s needs.
- **1981:** The Japanese government allocated \$850 million (over \$2 billion dollars in today’s money) to the Fifth Generation Computer project. Their aim was to create computers that could translate, converse in human language, and express reasoning on a human level.
- **1984:** The AAAI warns of an incoming “AI Winter” where funding and interest would decrease, and make research significantly more difficult.
- **1985:** An autonomous drawing program known as AARON is demonstrated at the AAAI conference.
- **1986:** Ernst Dickmann and his team at Bundeswehr University of Munich created and demonstrated the first driverless car (or robot car). It could drive up to 55 mph on roads that didn’t have other obstacles or human drivers.
- **1987:** Commercial launch of Alacrity by Alactrious Inc. Alacrity was the first strategy managerial advisory system, and used a complex expert system with 3,000+ rules.

c. Why Government is adopting Artificial Intelligence?

d. How Artificial Intelligence is affecting the privacy of humans? Explain briefly

e. What is the purpose of Artificial Intelligence?