

Introduction to AI and Machine Learning for Middle Schoolers

AI And ML · Answer Key · 15 Questions

1. What is the primary goal of Artificial Intelligence (AI)?

- A) To create machines that can solve complex mathematical problems only.
- B) To enable machines to perform tasks that typically require human intelligence.**
- C) To develop faster internet connections for homes.
- D) To design new types of video games with advanced graphics.

2. Machine Learning (ML) is a subfield of AI. What is the core idea behind Machine Learning?

- A) Writing explicit, step-by-step instructions for every possible situation.
- B) Allowing computers to learn from data without being explicitly programmed for each task.**
- C) Creating robots that can move around like humans.
- D) Developing screens that can display more colours.

3. In Machine Learning, what are 'data' used for?

- A) To make the computer program run slower.
- B) To train the machine learning model to make predictions or decisions.**
- C) To store pictures and videos on the computer.
- D) To act as a password for the system.

4. Which of these is an example of Artificial Intelligence being used in everyday life?

- A) A simple calculator that performs basic arithmetic.
- B) A spreadsheet program used for organising data.
- C) A voice assistant like Siri or Google Assistant that understands and responds to commands.**
- D) A word processor used for writing documents.

5. What is a 'model' in the context of Machine Learning?

- A) A physical representation of a robot.
- B) A set of rules written by a human programmer.
- C) A system that has learned patterns from data and can make predictions.**
- D) A type of computer hardware.

6. What does a 'supervised learning' model typically need to be trained?

- A) Only raw, unlabelled data.
- B) Data that is completely random and has no patterns.
- C) Data that includes both the input and the correct output (labels).**
- D) Instructions from other AI systems.

7. Unsupervised learning is a type of Machine Learning. What is a key characteristic of unsupervised learning?

- A) It requires the data to have pre-defined answers.
- B) It aims to find patterns and structures in data without explicit labels.**
- C) It is only used for making predictions about the future.
- D) It needs a human to constantly check its work.

8. Which of these is an example of a task that Machine Learning can be used for?

- A) Printing documents.
- B) Recognising faces in photos.**
- C) Editing text in a document.
- D) Calculating the area of a rectangle.

9. What is the term for the process of feeding data into an ML model so it can learn?

- A) Testing
- B) Debugging
- C) Training**
- D) Compiling

10. What is 'automation' in the context of AI?

- A) Making machines more expensive.
- B) Using AI to perform tasks that were previously done by humans, often without direct human intervention.**
- C) Designing new software applications.
- D) Increasing the size of computer screens.

11. In a machine learning context, what does it mean if a model makes an 'accurate' prediction?

- A) It means the prediction is completely random.
- B) It means the prediction is very close to the actual correct answer.**
- C) It means the prediction is intentionally wrong.
- D) It means the prediction requires a lot of energy to make.

12. What is 'algorithm' in computer science and AI?

- A) A type of computer hardware.
- B) A set of step-by-step instructions that a computer follows to solve a problem or perform a task.**
- C) A physical robot.
- D) A fictional character in a video game.

13. Why is having a large and diverse dataset important for training an ML model?

- A) It makes the training process longer and more complex.
- B) It can lead to biased or inaccurate predictions if the data is limited or skewed.**
- C) It is not important; small datasets are sufficient.
- D) It only helps with making simple calculations.

14. What does the term 'neural network' refer to in AI?

- A) A physical network of electrical wires.
- B) A type of computer hardware that mimics the structure and function of the human brain.**
- C) A system for connecting to the internet.
- D) A method for sorting physical objects.

15. Which of the following is NOT a common application of AI?

- A) Self-driving cars
- B) Medical diagnosis assistance
- C) Robotic surgery
- D) Manual data entry into a simple spreadsheet**