Name: _____   Date: _____

Dissect Electronic Minds: A 4th Grade Advanced AI Lab Quiz

Develop critical analysis skills by synthesizing how pattern recognition and feedback loops enable synthetic systems to solve complex environmental challenges.

---

1. An environmental scientist uses a computer program to identify different species of coral by looking at thousands of underwater photos. This is an example of what process?

    A. Linear processing
    B. Pattern recognition
    C. Manual sorting
    D. Physical modeling

2. When an AI makes a mistake and a human developer corrects it, the process of the math adjusting to get closer to the right answer is known as _____.

    A. Data collection
    B. Web hosting
    C. Backpropagation
    D. Storage capacity

3. A 'training set' is a large collection of data used to teach an AI how to make accurate predictions before it is used in the real world.

    A. True
    B. False

4. Imagine an AI designed to help a robotic bee pollinate flowers. If the bee ignores a flower it has already visited, it is demonstrating which high-level trait?

    A. Emotional empathy
    B. Physical strength
    C. Logical reasoning
    D. Static programming

5. In a neural network, the artificial layers that sit between the 'Input' and the 'Output' are called _____ layers.

    A. Invisible
    B. Hidden
    C. Secret
    D. Ghost

6. Computer vision is the field of AI that allows a drone to 'see' and avoid a power line while flying autonomously.

    A. True

    B.   False

7. Which of the following describes a 'False Positive' in an AI wildlife monitoring system?

    A.   The AI correctly identifies a wolf.

    B.   The AI misses a wolf that was actually there.

    C.   The AI identifies a blowing bush as a wolf.

    D.   The AI ignores a rock that is not a wolf.

8. A self-correcting thermostat that learns your favorite temperature settings over a week is using _____ to improve its performance.

    A.   Global positioning

    B.   Mechanical gears

    C.   Iterative learning

    D.   Hardwired logic

9. Large Language Models (LLMs) understand the 'meaning' of words exactly like humans do through life experiences.

    A.   True

    B.   False

10. Why is 'Biased Data' a major concern for scientists building AI to help doctors?

    A.   It makes the computer run too slowly.

    B.   It can lead to unfair or incorrect medical decisions.

    C.   It causes the computer screen to flicker.

    D.   It prevents the AI from connecting to the internet.