1

Question: What is the primary motivation behind the development of artificial neural networks?

A) To replicate the computational power of conventional digital computers.

B) To mimic the way the human brain performs specific tasks.

C) To create a linear, simple, and serial computer.

D) To surpass the human brain in speed and complexity.

Correct Answer: B

2

Question: Which of the following is NOT a characteristic of the human brain's computation method?

A) Highly nonlinear

B) Complex

C) Parallel

D) Linear

Correct Answer: D

3

Question: What is the role of synaptic weights in a neural network?

A) To transmit input signals without modification.

B) To store acquired knowledge.

C) To limit the amplitude of the neuron's output.

D) To sum the inputs of a neuron.

Correct Answer: B

4

Question: What is the function of a sigmoid activation function in a neural network?

A) To act as a linear combiner of inputs.

B) To introduce non-linearity and limit the output amplitude.

C) To sum the weighted inputs.

D) To connect neurons in different layers.

Correct Answer: B

5

Question: Which type of learning involves updating synaptic weights using labeled training examples, each consisting of an input signal and a desired response?

A) Unsupervised learning

B) Reinforcement learning

C) Supervised learning

D) Contextual learning

Correct Answer: C