AI and ML in Healthcare

Medical Technology · Answer Key · 12 Questions

1. In medical imaging, which type of neural network is most commonly used to analyze MRI or CT scans for anomalies?

A) Convolutional Neural Networks
B) Recurrent Neural Networks
C) Generative Adversarial Networks
D) Linear Regression Models

2. What is the primary purpose of using machine learning algorithms in analyzing a patient's electronic health record (EHR)?

A) To replace the need for physical exams
B) To predict potential disease risks based on patterns
C) To automatically prescribe medication
D) To perform surgical procedures

3. Which machine learning technique is frequently used to classify skin lesions as benign or malignant based on image datasets?

A) Supervised Learning
B) Unsupervised Learning
C) Reinforcement Learning
D) Clustering

4. AI-powered analysis of an Electrocardiogram (ECG) is most commonly used to detect which of the following?

A) Blood glucose levels
B) Arrhythmias
C) Bone density
D) Lung capacity

5. In the context of protein folding, which AI program successfully predicted the 3D structures of nearly all known proteins?

A) AlphaFold
B) Watson Health
C) DeepBlue
D) GPT-4

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6. Machine learning models analyzing retinal images are primarily used to screen for which condition?

A) Diabetic retinopathy
B) Astigmatism
C) Color blindness
D) Presbyopia

7. What role does Natural Language Processing (NLP) serve in clinical research?

A) Mining unstructured text from clinical notes
B) Replacing the need for patient consent
C) Measuring blood pressure
D) Manufacturing synthetic limbs

8. In oncology, what do AI systems typically measure to assist in the grading of tumors from biopsy slides?

A) Cellular morphology
B) Body temperature
C) Pulse rate
D) Reflex speed

9. Which machine learning approach is often used to group patients into 'clusters' based on similar genetic markers to personalize treatment?

A) Unsupervised Learning
B) Supervised Learning
C) Reinforcement Learning
D) Regression Analysis

10. What is the primary benefit of AI-driven 'wearable' technology in monitoring chronic heart conditions?

A) Continuous data collection outside a clinical setting
B) Eliminating the need for medical practitioners
C) Creating artificial heart valves
D) Replacing physical heart transplants

11. When training an AI model for medical diagnosis, what is the 'Ground Truth' used for?

A) As the target label for supervised learning
B) To store patient records
C) To provide power to the server
D) To regulate ethical standards

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12. AI algorithms in digital pathology often focus on identifying 'mitotic figures'. What are these?

A) Cells in the process of division

B) Dead skin cells

C) Neurons in the brain

D) Red blood cells

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