

AI and ML in Healthcare

Medical Technology · Practice Test · 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

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

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