

Python Development & AI Foundations



CERTIFICATE OF ACHIEVEMENT

This certificate is proudly presented to

Edward Hlapane

> For: **Python Development & AI Foundations**

> With a score of: **33/40 (82.5%)**

> Date: **August 27, 2025**



CAPACITI

Report Summary

Name	: Edward Hlapane
Your Score	: 33 out of 40 (82.5%)
Correct Answers	: 33 Questions
Incorrect Answers	: 6 Questions
Unanswered	: 0 Questions
Required Passing Grade (%)	: 70%
Time Taken	: 6 mins 22 secs
Date	: Aug 27, 2025
Your Result	: Pass
Email	: Edward.Hlapane@Capaciti.org.za

Your Answers

Correct

- Q1) What subfield of AI focuses on mimicking human reasoning through logic-based systems?
- A. Reinforcement learning
 - B. Fuzzy logic
 - C. Symbolic AI (Your Answer)(Correct)
 - D. Natural language understanding

Correct

- Q2) What is a potential risk of unchecked AI development?
- A. Higher internet bills
 - B. Data bias and discrimination (Your Answer)(Correct)
 - C. More social media use
 - D. Low storage

Incorrect

- Q3) Knowledge representation is used to store facts about the world.
- A. True (Correct)
 - B. False (Your Answer)(Incorrect)

Incorrect

- Q4) Rule-based systems require learning from large datasets.
- A. True (Your Answer)(Incorrect)
 - B. False (Correct)

Correct

Q5) Virtual assistants like Siri and Alexa are powered by AI.

- A. True (Your Answer)(Correct)
- B. False

Correct

Q6) Which AI technology powers product recommendation engines on platforms like Netflix or Amazon?

- A. Reinforcement learning
- B. Rule-based systems
- C. Recommender systems using ML (Your Answer)(Correct)
- D. Genetic algorithms

Essay

Q7) Which AI technique is commonly used in self-driving cars?

Your answer

Computer Vision

Explanation: The question is incomplete in the provided content.

Correct

Q8) Which of the following promotes responsible AI use?

- A. Data hoarding
- B. Black-box modeling
- C. Algorithm transparency (Your Answer)(Correct)
- D. Data manipulation

Correct

Q9) Which AI technique is commonly used in self-driving cars?

- A. Expert systems
- B. Neural networks (Your Answer)(Correct)
- C. Optical character recognition
- D. Basic automation

Incorrect

Q10) Why should diverse datasets be used in training AI?

- A. To increase model size
- B. To reduce training time
- C. To prevent biased predictions (Correct)
- D. To make debugging easier (Your Answer)(Incorrect)

Correct

Q11) AI must always operate independently from humans.

- A. True
- B. False (Your Answer)(Correct)

Correct

Q12) Transparency in AI systems can help build trust.

- A. True (Your Answer)(Correct)
- B. False

Correct

Q13) Deep learning is a subset of machine learning.

- A. True (Your Answer)(Correct)
- B. False

Correct

Q14) In the automotive industry, AI is primarily used for:

- A. Color matching
- B. Driverless navigation (Your Answer)(Correct)
- C. GPS updates
- D. Audio syncing

Correct

Q15) Which of the following is a common AI application in healthcare?

- A. Photo filtering
- B. Predictive diagnosis (Your Answer)(Correct)
- C. Stock trading bots
- D. Game design

Correct

Q16) What does AI stand for?

- A. Advanced Intelligence
- B. Artificial Intelligence (Your Answer)(Correct)
- C. Automated Integration
- D. Applied Information

Correct

Q17) Machine learning is a subfield of deep learning.

- A. True
- B. False (Your Answer)(Correct)

Correct

Q18) All AI decisions are always fair and neutral.

- A. True
- B. False (Your Answer)(Correct)

Incorrect

Q19) Which AI application is used in agriculture?

- A. Sentiment analysis (Your Answer)(Incorrect)
- B. Yield prediction (Correct)
- C. Video compression
- D. Language translation

Correct

Q20) Which of the following best defines machine learning?

- A. Writing code that performs calculations
- B. Teaching computers to learn from data (Your Answer)(Correct)
- C. Programming logic for rule-based systems
- D. Training robots to follow orders

Correct

Q21) Which of the following is not a characteristic of AI?

- A. Adaptability
- B. Autonomy
- C. Predictability
- D. Manual intervention (Your Answer)(Correct)

Correct

Q22) Why is explainability important in AI?

- A. Helps in debugging errors
- B. Makes AI decisions understandable to humans (Your Answer)(Correct)
- C. Boosts performance
- D. Improves coding speed

Correct

Q23) The term "narrow AI" refers to:

- A. AI that solves only general problems
- B. Human-level AI
- C. AI trained for a specific task (Your Answer)(Correct)
- D. Experimental robotics

Incorrect

Q24) What AI application helps detect customer sentiment on social media?

- A. Predictive analytics (Your Answer)(Incorrect)
- B. Natural Language Processing (Correct)
- C. Expert systems
- D. Decision trees

Correct

Q25) Data privacy is not a concern in AI systems.

- A. True
- B. False (Your Answer)(Correct)

Correct

Q26) Chatbots often use which combination of AI subfields?

- A. Robotics + Vision
- B. Deep learning + NLP (Your Answer)(Correct)
- C. Rule-based + Random AI
- D. Statistics + Sorting algorithms

Correct

Q27) AI can be used to detect spam emails.

- A. True (Your Answer)(Correct)
- B. False

Correct

Q28) What does a "neural network" attempt to mimic?

- A. Internet networks
- B. The brain's structure (Your Answer)(Correct)
- C. File systems
- D. Logical circuits

Correct

Q29) Which of the following AI types interacts with the environment and learns from rewards and punishments?

- A. Supervised learning
- B. Reinforcement learning (Your Answer)(Correct)
- C. Unsupervised learning
- D. Semi-supervised learning

Correct

Q30) Which subfield enables computers to recognize images or video content?

- A. Natural language processing
- B. Knowledge representation
- C. Computer vision (Your Answer)(Correct)
- D. Predictive analytics

Correct

Q31) What makes an algorithm "intelligent"?

- A. It can generate random outputs
- B. It can learn from data and adapt (Your Answer)(Correct)
- C. It can only perform arithmetic
- D. It requires no human input

Correct

Q32) Which AI subfield focuses on enabling machines to understand and generate human language?

- A. Robotics
- B. NLP (Natural Language Processing) (Your Answer)(Correct)
- C. Computer vision
- D. Deep learning

Correct

Q33) Which principle is most associated with ethical AI?

- A. Profitability
- B. Innovation
- C. Fairness (Your Answer)(Correct)
- D. Scalability

Incorrect

Q34) AI is too expensive for small businesses.

- A. True (Your Answer)(Incorrect)
- B. False (Correct)

Correct

Q35) What does the "intelligence" in AI refer to?

- A. Computational speed
- B. Ability to make decisions (Your Answer)(Correct)
- C. Memory usage
- D. Cost-effectiveness

Correct

Q36) What is the key feature of deep learning?

- A. Hand-coded rules
- B. Shallow data analysis
- C. Neural networks with multiple layers (Your Answer)(Correct)
- D. Use of symbolic logic

Correct

Q37) What role does AI play in fraud detection?

- A. Creates fake transactions
- B. Enhances payment speed
- C. Identifies patterns in user behavior (Your Answer)(Correct)
- D. Blocks payment gateways

Correct

- Q38) What is the term for the process of feeding AI systems with labeled data to learn patterns?
- A. Reinforcement learning
 - B. Unsupervised learning
 - C. Supervised learning (Your Answer)(Correct)
 - D. Deep learning

Correct

- Q39) AI systems can learn and improve over time without being explicitly programmed.
- A. True (Your Answer)(Correct)
 - B. False

Correct

- Q40) What does "AI bias" refer to?
- A. Faster processing
 - B. Emotional decisions
 - C. Favoritism in AI predictions (Your Answer)(Correct)
 - D. Data storage issues