I AIO

SCO INTERNATIONAL AI OLYMPIAD 2023-24

CLASS 5

QUESTION PAPER SET

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Guidelines for the Candidate

1. Before the exam begins, you will have an additional 20 minutes to complete the OMR Sheet with personal information.

2. On the OMR Sheet, clearly write your name, **school code, class, roll number, and mobile number**..

   Total Questions - 35

3. Every inquiry must be answered. There are no failing grades. Calculator use is not allowed.

4. There is just ONE right response. Select ONE response choice only.

5. Use only an HB pencil or a blue or black ballpoint pen to indicate your choice of responses by darkening the corresponding circles on the OMR Sheet. E.g.

   Q.1: What is the capital of India?

   A. Kolkata B. Mumbai C. Delhi   D. Chennai

   You must shade the circle next to option C on the OMR Sheet since that is the right response.

   Q.1.Ⓐ Ⓑ ● Ⓓ

6. At the conclusion of the test, hand over the OMR Sheet to the Invigilator.

7. Before attempting the paper, kindly provide your personal information in the box provided on this page. .

School Connect Online

Name:..

Registration ID.:... Contact No.:..

Section 1: Understanding AI and Machine Learning – Basic Concepts of AI and Machine Learning

1. What does AI stand for?

a) Artificial Intelligence
b) Automatic Internet
c) Automated Intelligence
d) Automated Information
Answer: a) Artificial Intelligence
Explanation: AI refers to the ability of machines to mimic human intelligence.

2. What is the main difference between AI and humans?

a) AI can make decisions by itself
b) Humans can work faster than AI
c) AI can only do math calculations
d) Humans can use AI

Answer: a) AI can make decisions by itself
Explanation: AI can learn and make decisions based on data.

3. What is the process of AI learning from data called?
a) Data science
b) Machine learning
c) Human learning
d) Data sorting

Answer: b) Machine learning
Explanation: In machine learning, AI learns from data patterns and improves over time.

4. Which of the following is a basic example of AI in action?
a) A calculator performing math
b) A robot recognizing a face
c) A clock showing time
d) A washing machine washing clothes

Answer: b) A robot recognizing a face
Explanation: AI can help robots recognize faces through image recognition.

5. How do AI programs become better at tasks?
a) By being taught by humans every time
b) By repeating tasks endlessly
c) By learning from data
d) By observing humans

Answer: c) By learning from data
Explanation: Machine learning helps AI improve over time by learning from large amounts of data.

6. Which of the following is used to train AI systems?
a) Data
b) Time
c) Computers
d) Humans

Answer: a) Data
Explanation: AI systems are trained using large datasets to recognize patterns.

7. What kind of tasks can AI perform in games?
a) Moving characters randomly
b) Solving puzzles and predicting moves
c) Drawing pictures
d) Watching movies

Answer: b) Solving puzzles and predicting moves
Explanation: AI in games can solve complex problems and predict the opponent's next move.

8. Which machine learning technique allows an AI to improve through experience?
a) Supervised learning
b) Reinforcement learning
c) Unsupervised learning
d) Learning by doing

Answer: b) Reinforcement learning
Explanation: In reinforcement learning, AI learns by performing actions and receiving feedback.

9. In which area is AI mostly used for prediction and forecasting?
a) Calculating sums
b) Predicting future events
c) Tracking pets
d) Sending emails

Answer: b) Predicting future events
Explanation: AI is used in weather prediction, stock market forecasting, and more.

10. What is an example of machine learning that helps detect spam emails?
a) Data recognition
b) Voice commands
c) Email filtering
d) Face recognition
Answer: c) Email filtering
Explanation: Machine learning algorithms help detect spam by learning from previous data.

Section 2: Data and Pattern Recognition – Introduction to Data Types and Simple Pattern Recognition

11. What is the first step in training an AI model?
a) Writing a computer program
b) Collecting data
c) Playing games
d) Asking for help
Answer: b) Collecting data
Explanation: AI needs data to learn patterns and make predictions.

12. Which of the following is an example of structured data?
a) Text messages
b) Images
c) Numbers in tables
d) Sounds
Answer: c) Numbers in tables
Explanation: Structured data is organized into a specific format like tables or databases.

13. What is pattern recognition in AI?
a) Finding random numbers
b) Identifying patterns in data
c) Making decisions
d) Writing new code
Answer: b) Identifying patterns in data
Explanation: Pattern recognition helps AI find relationships in data and make decisions.

14. Which data type can AI use to recognize objects in a picture?
a) Text data
b) Audio data
c) Image data
d) Numeric data
Answer: c) Image data
Explanation: AI uses image data to recognize objects in photos or videos.

15. How does AI recognize patterns in data?
a) By guessing
b) By learning from examples
c) By reading books
d) By observing humans
Answer: b) By learning from examples
Explanation: AI learns to recognize patterns by being trained on large datasets.

16. Which of the following is NOT a type of data used by AI?
a) Text
b) Numbers
c) Colors
d) Sleep patterns
Answer: d) Sleep patterns
Explanation: While sleep patterns can be data, they are not typically used by most AI

systems.

17. What is the main goal of AI in recognizing patterns in data?
a) To create new data
b) To understand and predict outcomes
c) To organize files
d) To create pictures
Answer: b) To understand and predict outcomes
Explanation: AI uses data to make predictions and decisions based on identified patterns.

18. What kind of data does a weather prediction system use?
a) Audio data
b) Image data
c) Historical and real-time weather data
d) Financial data
Answer: c) Historical and real-time weather data
Explanation: Weather AI uses both past and current weather data to forecast conditions.

19. What is one example of AI using pattern recognition in healthcare?
a) Detecting cancer from X-rays
b) Cooking food for patients
c) Teaching doctors
d) Cleaning hospitals
Answer: a) Detecting cancer from X-rays
Explanation: AI can be trained to recognize cancerous cells in medical images like X-rays.

20. How does an AI chatbot recognize and respond to questions?
a) By asking humans for answers
b) By learning from user input and previous conversations
c) By guessing randomly
d) By searching for answers online
Answer: b) By learning from user input and previous conversations
Explanation: AI chatbots learn from conversations to understand and provide relevant responses.

Section 3: Real-Life AI Examples – AI in Transportation, Communication, and Entertainment

21. Which of these AI applications is used in self-driving cars?
a) Image recognition
b) Object recognition and decision-making
c) Predictive text
d) Voice commands
Answer: b) Object recognition and decision-making
Explanation: Self-driving cars use AI to recognize objects on the road and make driving decisions.

22. How does AI help in online shopping recommendations?
a) By guessing what you want to buy
b) By using previous shopping data to suggest products
c) By reading reviews
d) By sorting products randomly

Answer: b) By using previous shopping data to suggest products
Explanation: AI analyzes your past purchases and browsing history to recommend products.

23. Which AI application helps in voice search on smartphones?
a) Siri
b) Camera
c) GPS
d) Weather app
Answer: a) Siri
Explanation: Siri is an AI voice assistant that helps with voice searches on iPhones.

24. How does AI help in movie recommendations?
a) By guessing
b) By recommending based on your previous watches
c) By showing random movies
d) By playing random trailers
Answer: b) By recommending based on your previous watches
Explanation: AI analyzes what movies you've watched before and suggests similar ones.

25. Which of these is an example of AI used in gaming?
a) Character control
b) Predicting players' moves
c) Sound effects
d) Drawing pictures
Answer: b) Predicting players' moves
Explanation: AI in gaming can predict moves and make games more challenging.

26. How is AI used in social media?
a) To post photos
b) To identify faces in photos
c) To send messages
d) To count likes
Answer: b) To identify faces in photos
Explanation: AI helps in identifying and tagging faces in social media photos.

27. How does AI help in virtual assistants like Alexa?
a) By understanding voice commands
b) By playing music only
c) By controlling home appliances
d) Both a and c
Answer: d) Both a and c
Explanation: Alexa uses AI to understand voice commands and control smart home devices.

28. How does AI help robots in industries?
a) By cooking food
b) By recognizing products and packaging them
c) By writing reports
d) By drawing artwork
Answer: b) By recognizing products and packaging them
Explanation: AI helps robots identify and handle products for packaging in factories.

29. What type of AI is used to translate languages in real-time?
a) Voice recognition
b) Machine translation
c) Image recognition
d) Gesture recognition
Answer: b) Machine translation
Explanation: AI can translate text or speech in real-time using machine translation.

30. Which of the following AI tools is used in healthcare for diagnosing diseases?
a) Personal assistant
b) Diagnostic AI tools
c) Facial recognition
d) Music player
Answer: b) Diagnostic AI tools
Explanation: AI helps doctors diagnose diseases based on patient data and medical images.

Section 4: Achievers Section – Basic Data Handling Tasks and Simple Machine Learning Games

31. What does a data scientist use to analyze data?
a) Data
b) Software programs
c) A calculator
d) All of the above
Answer: b) Software programs
Explanation: Data scientists use specialized software to analyze and interpret data.

32. What is the task of an AI system in a smart home?
a) To control the lights, temperature, and security
b) To answer the phone
c) To watch TV
d) To play music only
Answer: a) To control the lights, temperature, and security
Explanation: AI is used to control various aspects of a smart home for convenience and safety.

33. What kind of learning allows AI to learn without labeled data?
a) Unsupervised learning
b) Supervised learning

c) Reinforcement learning
d) Active learning
Answer: a) Unsupervised learning
Explanation: In unsupervised learning, AI finds patterns in data without pre-labeled examples.

34. Which of these is NOT a basic task in machine learning?
a) Collecting data
b) Labeling data
c) Visualizing data
d) Understanding human emotions
Answer: d) Understanding human emotions
Explanation: Understanding human emotions is complex and not a basic task in machine learning.

35. How does AI help with speech-to-text tasks?
a) By typing words
b) By recognizing spoken words and converting them to text
c) By drawing pictures
d) By predicting the next word
Answer: b) By recognizing spoken words and converting them to text
Explanation: AI can convert speech into written text through voice recognition technology.

36. What is the AI model used for identifying objects in images?
a) Regression
b) Classification
c) Clustering
d) Prediction
Answer: b) Classification
Explanation: Classification is used in AI to categorize objects into specific groups.

37. What is the purpose of reinforcement learning in AI?
a) To improve over time by receiving rewards or punishments
b) To make decisions based on fixed rules
c) To gather data for training
d) To recognize patterns in data
Answer: a) To improve over time by receiving rewards or punishments
Explanation: Reinforcement learning helps AI improve through trial and error by receiving feedback.

38. What does AI use to recognize speech patterns?
a) Image data
b) Audio data
c) Numerical data
d) Text data
Answer: b) Audio data
Explanation: AI uses audio data to recognize and understand speech patterns.

39. What is the benefit of AI in gaming?
a) AI can predict player moves and make the game more challenging
b) AI helps players cheat
c) AI makes games shorter
d) AI plays the game for you
Answer: a) AI can predict player moves and make the game more challenging
Explanation: AI enhances games by predicting moves and making them more interactive.

40. How can AI help in the field of education?
a) By providing personalized learning experiences
b) By grading papers automatically
c) By giving teachers feedback on students' progress
d) All of the above
Answer: d) All of the above
Explanation: AI can improve education by personalizing learning, grading, and providing feedback.

41. What is the role of a machine learning algorithm in AI?
a) To process large amounts of data and find patterns
b) To organize the data
c) To draw pictures
d) To provide answers without data
Answer: a) To process large amounts of data and find patterns
Explanation: Machine learning algorithms help AI learn from data to identify patterns and make decisions.

42. What is an example of AI in communication?
a) Text messaging
b) Email filtering
c) Automatic language translation
d) All of the above
Answer: d) All of the above
Explanation: AI helps in communication by filtering emails, sending messages, and translating languages.

43. Which of these is an example of AI in transportation?
a) Traffic lights that adjust based on traffic flow
b) GPS navigation systems
c) Self-driving cars
d) All of the above
Answer: d) All of the above
Explanation: AI is used in self-driving cars, smart traffic management, and GPS navigation.

44. How does AI assist in online learning platforms?
a) By suggesting courses based on student behavior
b) By automatically creating lessons
c) By grading all assignments
d) By organizing exams
Answer: a) By suggesting courses based on student behavior
Explanation: AI analyzes student behavior and recommends personalized learning content.

45. How does AI assist in making decisions in finance?
a) By offering financial advice
b) By analyzing market data
c) By predicting stock market trends
d) All of the above
Answer: d) All of the above
Explanation: AI is used in finance for making investment decisions based on data analysis and predictions.

Achievers Section: Advanced Tasks in AI

46. Which AI technology is used to predict what products you might want to buy next on Amazon?
a) Recommendation system
b) Image recognition
c) Voice assistant
d) Speech-to-text
Answer: a) Recommendation system
Explanation: Recommendation systems use past data to suggest products.

47. What does AI need in order to learn effectively?
a) Huge amounts of data
b) Human interaction
c) Voice commands
d) Real-time feedback
Answer: a) Huge amounts of data
Explanation: AI needs large datasets to learn patterns and improve its performance.

48. What kind of AI is used in speech recognition systems?
a) Voice recognition AI
b) Image recognition AI
c) Text recognition AI
d) Data sorting AI
Answer: a) Voice recognition AI
Explanation: Voice recognition AI helps in understanding and processing human speech.

49. What is an example of AI used in healthcare to improve patient care?
a) Predicting diseases based on medical data
b) Automatically giving prescriptions
c) Detecting patient emotions
d) Taking patient history
Answer: a) Predicting diseases based on medical data
Explanation: AI can help doctors predict diseases based on patient medical records and data.

50. What task does AI perform in an online game?
a) Managing the game
b) Predicting moves of players
c) Generating levels

d) All of the above
Answer: d) All of the above
Explanation: AI helps manage the game environment, predict moves, and generate game content.

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