School Connect Online

SCO INTERNATIONAL

ARTIFICIAL INTELLIGENCE OLYMPIAD

GRADE 5 SAMPLE PAPER

A ready official assessment document with answer key, explanations, and age-fit AI reasoning.

Designed for Grade 5 AI learning pathways and aligned with SCO's global preparation, practice, reporting, and future-ready academic growth model.

- age-fit AI literacy for primary-level learners globally
- conceptual understanding of AI, data, patterns, machine learning, safety, and real-life applications
- Ready academic document style for website view and download

AI Basics	Machine Learning	Data Thinking	Patterns	Real-life AI
Safety	Projects	AI Games	Ethics	Future Skills

SCO International Artificial Intelligence Olympiad – Class 5 Sample Paper

Field	Details
Class	5
Exam	SCO International Artificial Intelligence Olympiad
Question Paper Set	S
Academic Year	2024-25 Reference Pattern
Total Questions	35
Time	60 minutes
Maximum Marks	40 (Q1-Q30: 1 mark each; Q31-Q35: 2 marks each)

Candidate Details

Name: _____	**Registration ID:** _____
School: _____	**Contact No.:** _____
Date: _____	**Signature:** _____

Guidelines for the Candidate

- Do not open this booklet until asked to do so.
- There are 35 multiple-choice questions. Each question has only one correct answer.
- Questions 1 to 30 carry 1 mark each. Questions 31 to 35 are Achievers Section questions and carry 2 marks each.
- There is no negative marking.
- Use only an HB pencil or blue/black ballpoint pen to mark the OMR sheet or answer sheet.
- No calculator, smart watch, mobile phone, or internet-enabled device is allowed.
- Read each situation carefully. AI questions may test pattern recognition, data reasoning, safe use, and real-life decision-making.
- Hand over the answer sheet to the invigilator at the end of the test.

Section Pattern

Section	Question Nos.	Focus Area	Marks
A	1-10	Understanding AI and Machine Learning	10
B	11-20	Data Around Us, Pattern Recognition, and Sequence Thinking	10
C	21-30	Real-life AI, Communication, and Responsible Use	10
D	31-35	Achievers Section: Data Tasks and Simple AI Projects	10

Question Paper

Section A – Understanding AI and Machine Learning

Q1. An AI program is trained to identify animals from pictures. If it is shown an animal it has never seen before, what will it most likely do?

A) Guess completely randomly
B) Compare the picture with learned examples and predict the closest match
C) Always reject the picture
D) Turn the picture into text only

Q2. Why is a large and balanced dataset useful for machine learning?

A) It helps the AI learn patterns more accurately
B) It makes the screen brighter
C) It removes the need for testing
D) It stops the AI from using examples

Q3. A machine learning model improves when it receives new checked examples. What is this process called?

A) Copying
B) Continuous learning
C) Random colouring
D) Manual typing only

Q4. In a game, the AI notices that players lose after choosing one move. How can it use this information?

A) Suggest safer moves in future
B) Delete the game
C) Make all players lose
D) Stop using patterns

Q5. Which is a real-life example of machine learning?

A) A traffic app predicting travel time
B) A pencil on a desk
C) A fixed wall clock
D) A blank notebook

Q6. How does an AI chatbot choose the language of its reply?

A) It detects the language of the question
B) It always uses the same language
C) It guesses without reading
D) It uses only numbers

Q7. Why can AI fail on a new problem type?

A) It may not have training data for that kind of problem
B) It has too many colours
C) It never uses examples
D) It always knows everything

Q8. In a drawing app, an AI suggests your next drawing based on past drawings. What is it using?

A) Pattern recognition and prediction
B) Random choice only
C) A paper list only
D) A ruler

Q9. A self-driving car detects a person crossing the road and slows down. Which AI ability is shown?

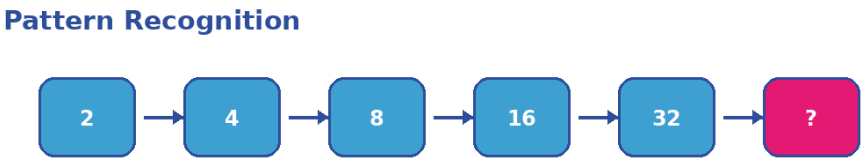
A) Real-time decision-making
B) Sleeping
C) Printing
D) Offline drawing only

Q10. If an AI keeps making the same wrong prediction, what could be one reason?

A) The training data may be incomplete or biased
B) The keyboard is too small
C) It has no electricity in the question
D) It is always perfect

Section B – AI Applications, Data, and Pattern Thinking

Q11. Pattern question: A robot sees the numbers 2, 4, 8, 16, 32. What is the next number?



A) 48
B) 64
C) 96
D) 128

Q12. An AI sees a triangle, square, and circle. The square is red and the others are blue. Which is the odd one out by colour?

A) Triangle
B) Square
C) Circle
D) None

Q13. A letter pattern is A, C, F, J, O. The gaps increase by 1 each time. What is next?

A) P
B) Q
C) U
D) V

Q14. Which data type helps identify the pattern Monday, Tuesday, Wednesday?

A) Text only
B) Numbers only
C) Date/time data
D) Image data

Q15. An AI sees temperatures 15°C, 18°C, 21°C, 24°C. What is the predicted next temperature?

A) 25°C
B) 27°C
C) 28°C
D) 30°C

Q16. A model sorts objects into round and square. Which object belongs to the round group?

A) A book
B) A soccer ball
C) A box
D) A notebook

Q17. The sequence 1, 4, 9, 16, 25 follows which rule?

A) Add 5
B) Multiply by 2
C) Square the next whole number
D) Subtract 3

Q18. A robot classifies objects with straight edges. Which object should it exclude?

A) Door
B) Book
C) Basketball
D) Table

Q19. An AI sees 2, 5, 10, 17, 26. Which rule best describes the differences?

A) Add consecutive odd numbers
B) Add 7 each time
C) Double the number
D) Subtract 1 each time

Q20. Student scores are 80%, 85%, 90%, 95%. What comes next if the pattern continues?

A) 98%
B) 99%
C) 100%
D) 105%

Section C – Real-life AI and Communication

Q21. A self-driving car detects an object 5 m ahead and stops when an object is within 2 m. If the object moves 2 m closer, what should the AI do?

A) Ignore it
B) Keep watching and slow down so it can stop at the safe distance
C) Speed up
D) Turn off sensors

Q22. Which AI-powered tool suggests words while you type a message?

A) Predictive text or autocorrect
B) Face detection only
C) Printed dictionary only
D) Image cropping only

Q23. How does a streaming app recommend movies?

A) It studies viewing history and preferences
B) It asks a chair
C) It only picks the oldest show
D) It ignores all data

Q24. A delivery company uses AI to save fuel. What should it prioritize?

A) The longest route
B) A short route covering all deliveries
C) The heaviest package only
D) The route with the most turns

Q25. If AI detects heavy traffic on one road, what is a smart traffic signal likely to do?

A) Give more green time to the congested side when safe
B) Switch off all lights
C) Ignore the traffic
D) Increase traffic jams purposely

Q26. Voice assistants improve understanding over time mainly by using what?

A) User interaction data and feedback
B) A louder speaker only
C) A new colour for the phone
D) A paper answer key

Q27. In games, how can AI make non-player characters smarter?

A) By adapting to player actions
B) By staying completely still
C) By deleting levels
D) By removing choices

Q28. If a translator hears "Hola", how does it decide the English meaning?

A) It uses language data to match the word to "Hello"
B) It rolls dice
C) It chooses a random word
D) It ignores speech

Q29. Which is an example of AI in transportation?

A) A smart traffic system adjusting signal timing
B) A paper map
C) A regular pencil
D) A plain road sign with no sensors

Q30. How does a music app recommend songs?

A) By analyzing listening habits and preferences
B) By reading a paper menu
C) By choosing only the shortest song
D) By avoiding all data

Section D – Achievers Section: Simple ML Games

Q31. A robot has seen only triangles and squares. If it is shown a pentagon, what is most likely?

A) It may classify it as unknown
B) It will always know pentagon
C) It will become a triangle
D) It will stop all computers

Q32. If you give an AI only the top half of a picture, what may happen?

A) It may make a less accurate guess
B) It will always be perfect
C) It cannot use pictures
D) It will print the answer sheet

Q33. An animal has height and weight values outside all training examples. What might the AI do?

A) Predict the closest available group
B) Always create a perfect new group
C) Ignore all animals forever
D) Change the weather

Q34. A weather model was trained only on sunny and rainy days. If it sees snow, what may happen?

A) It may classify snow as sunny or rainy incorrectly
B) It will certainly predict snow
C) It will cook food
D) It will erase the database

Q35. A model trained on red apples sees a green apple. Which feature may help it still predict apple?

A) Shape
B) Classroom number
C) Internet speed
D) Shoe size

Answer Key

Q	Ans	Q	Ans	Q	Ans	Q	Ans	Q	Ans
1	B	2	A	3	B	4	A	5	A
6	A	7	A	8	A	9	A	10	A
11	B	12	B	13	C	14	C	15	B
16	B	17	C	18	C	19	A	20	C
21	B	22	A	23	A	24	B	25	A
26	A	27	A	28	A	29	A	30	A
31	A	32	A	33	A	34	A	35	A

Detailed Answer Explanations

Q	Answer	Explanation
1	B	AI often compares new input with patterns learned from training examples.
2	A	A larger and balanced dataset gives the AI more examples and reduces pattern mistakes.
3	B	Continuous learning means improving performance as new useful data becomes available.
4	A	AI can use player data to make better suggestions and improve outcomes.
5	A	A traffic app can learn from road and time data to predict travel time.
6	A	Language detection helps a chatbot respond in the language used by the user.
7	A	AI depends on relevant examples. A new type of problem may be outside its training.
8	A	The AI studies previous choices and predicts likely next choices.
9	A	The car processes sensor data quickly and makes a safety decision.
10	A	Faulty or incomplete data can teach an AI the wrong pattern.
11	B	Each number is doubled, so 32 x 2 = 64.
12	B	The square has a different colour from the other two shapes.
13	C	The gaps are +2, +3, +4, +5, so the next gap is +6. O + 6 = U.
14	C	Days of the week are part of date/time-related data.
15	B	The temperature rises by 3°C each time, so 24°C + 3°C = 27°C.
16	B	A soccer ball has a round shape.
17	C	These are square numbers: 1^2, 2^2, 3^2, 4^2, 5^2.
18	C	A basketball is round and does not have straight edges.
19	A	The differences are 3, 5, 7, 9, which are consecutive odd numbers.
20	C	The score increases by 5 each time. The next value is 100%.
21	B	The car should monitor distance and slow down before reaching the unsafe limit.
22	A	Predictive text uses language patterns to suggest likely words.
23	A	Recommendation systems use patterns from user history and similar content.
24	B	Route optimization chooses an efficient path to reduce distance, time, and fuel use.
25	A	Smart signals can adjust green time to reduce congestion safely.
26	A	Voice systems can improve from examples, corrections, and interactions.
27	A	Game AI can respond to player behaviour to make the game more realistic.
28	A	Translation systems compare input with language data and learned patterns.
29	A	Smart traffic systems use data and decision rules to manage roads.
30	A	Music recommenders use past listening behaviour and song features.
31	A	Without pentagon training examples, the robot may not recognize the new shape.
32	A	Incomplete input can reduce prediction accuracy.
33	A	AI often uses the closest learned pattern when a new input is outside the familiar range.
34	A	Without snow examples, the model may force the new case into a known category.
35	A	Even if colour changes, the apple shape can still help the model classify the fruit.