

SCO INTERNATIONAL CODING OLYMPIAD 2023-24

DO NOT OPEN THIS BOOKLET UNTIL ASKED TO DO SO

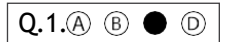
Guidelines for the Candidate

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..**
3. Four sections make up the question paper:
4. Every inquiry must be answered. There are no failing grades. Calculator use is not allowed.
5. There is just ONE right response. Select ONE response choice only.
6. 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.



7. At the conclusion of the test, hand over the OMR Sheet to the Invigilator.
8. Before attempting the paper, kindly provide your personal information in the box provided on this page. .



Name:.....

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

Section 1: Fundamentals of Coding

1.	<p>What does a variable in programming do?</p> <p>A) Stores data B) Repeats actions C) Ends a program D) Displays output</p> <p>Answer: A Explanation: Variables are used to store data that can be used and changed in a program.</p>
2.	<p>Which of the following is a programming language commonly used by beginners?</p> <p>A) Python B) Windows C) PowerPoint D) Microsoft Word</p> <p>Answer: A Explanation: Python is a popular language for beginners because of its simple syntax.</p>
3.	<p>Which symbol is used for multiplication in coding?</p> <p>A) + B) - C) / D) *</p> <p>Answer: D Explanation: The * symbol represents multiplication in most programming languages.</p>
4.	<p>What is a loop in programming used for?</p> <p>A) Repeating actions B) Deleting files C) Storing data D) Stopping the program</p> <p>Answer: A Explanation: A loop repeats actions until a specified condition is met.</p>
5.	<p>What is an “if statement” used for in coding?</p> <p>A) To repeat actions B) To make decisions based on conditions C) To store data D) To display output</p> <p>Answer: B Explanation: An if statement allows the program to make decisions based on conditions.</p>
6.	<p>Which command would you use to show output in Python?</p>

	<p>A) show() B) input() C) display() D) print() Answer: D Explanation: print() is used to display output in Python.</p>
7.	<p>What is a function in programming? A) A tool to store data B) A block of code that performs a specific task C) A way to end a program D) A variable in code Answer: B Explanation: A function is a reusable block of code that performs a specific task.</p>
8.	<p>Which of these data types is used for whole numbers? A) String B) Float C) Boolean D) Integer Answer: D Explanation: Integers represent whole numbers.</p>
9.	<p>What does “debugging” mean in coding? A) Writing code B) Finding and fixing errors in code C) Repeating code D) Stopping the program Answer: B Explanation: Debugging is the process of identifying and fixing errors in code.</p>
10.	<p>What does “input” mean in programming? A) To display a message B) To read data from a user C) To end a program D) To save data Answer: B Explanation: Input allows a program to receive data from the user.</p>
Section 2. Logic and Reasoning	
11.	<p>If a pattern follows “2, 4, 6, 8, __,” what comes next? A) 9 B) 10 C) 12 D) 14</p>

	<p>Answer: B Explanation: The pattern increases by 2 each time, so the next number is 10.</p>
12.	<p>In a puzzle, if each apple represents 4 points and you have 5 apples, what is your score? A) 20 B) 15 C) 25 D) 10 Answer: A Explanation: Each apple is 4 points, so 5 apples equal $4 * 5 = 20$ points.</p>
13.	<p>Which of these statements is true about odd numbers? A) They end in 2 B) They can be divided by 2 without remainder C) They end in 1, 3, 5, 7, or 9 D) They are never positive Answer: C Explanation: Odd numbers end in 1, 3, 5, 7, or 9 and cannot be evenly divided by 2.</p>
14.	<p>If a variable x starts at 10 and you subtract 2 three times, what is x? A) 6 B) 8 C) 4 D) 10 Answer: A Explanation: $10 - (2 * 3) = 10 - 6 = 4$.</p>
15.	<p>If $4 + 5 = 20$ and $3 + 2 = 10$, what is $5 + 5$? A) 20 B) 25 C) 30 D) 50 Answer: C Explanation: This pattern multiplies the sum by 5. So, $(5 + 5) * 5 = 50$.</p>
16.	<p>In a coding sequence, if a robot moves right 3 steps, then up 2 steps, which direction is it facing? A) North B) East C) South D) West Answer: B Explanation: Moving right and then up doesn't change the direction; it only changes the position.</p>
17.	<p>If a sequence goes "5, 10, 20, __," what is the next number?</p>

	<p>A) 30 B) 25 C) 40 D) 50 Answer: C Explanation: The pattern doubles each time, so the next number is 40.</p>
18.	<p>What will be the output of if $x = 3$, then $x + 5$? A) 6 B) 5 C) 8 D) 10 Answer: C Explanation: $3 + 5 = 8$.</p>
19.	<p>If you start with 15 and subtract 3 three times, what is the result? A) 9 B) 12 C) 6 D) 5 Answer: A Explanation: $15 - (3 * 3) = 15 - 9 = 6$.</p>
20.	<p>If “1, 3, 5, 7, ___” continues, what is next? A) 9 B) 10 C) 8 D) 6 Answer: A Explanation: The pattern increases by 2 each time, so the next number is 9.</p>
<p>Section 3: Simple Game Creation</p>	
21.	<p>In a game, what do we use to keep score? A) Loop B) Variable C) Function D) Input Answer: B Explanation: A variable can be used to store and update the score.</p>
22.	<p>What would a “while” loop do in a game? A) Run a task once B) Repeat a task until a condition is met C) End the game D) Display text Answer: B Explanation: A while loop repeats a task until the condition is false.</p>

23.	<p>In a game, if each coin is worth 2 points, how many points for 6 coins?</p> <p>A) 10 B) 15 C) 12 D) 20</p> <p>Answer: C Explanation: 6 coins at 2 points each = $6 * 2 = 12$.</p>
24.	<p>What does “game over” usually depend on in games?</p> <p>A) Player choice B) Loop C) Specific condition D) Print function</p> <p>Answer: C Explanation: Game over is typically triggered by meeting specific game conditions.</p>
25.	<p>What do you need to create a game level?</p> <p>A) Loop B) Function C) Variable D) Print</p> <p>Answer: A Explanation: Loops can be used to create game levels that repeat tasks.</p>
26.	<p>If you need to keep track of a player’s health in a game, which coding element would you use?</p> <p>A) Function B) Variable C) Loop D) Array</p> <p>Answer: B Explanation: A variable can store and update the health points as they change in the game.</p>
27.	<p>In a simple animation, which command is used to move an object to the left?</p> <p>A) moveUp() B) moveRight() C) moveLeft() D) moveDown()</p> <p>Answer: C Explanation: moveLeft() moves an object to the left.</p>

28.	<p>In a game, what type of loop would you use to keep a character jumping up and down until the player stops it?</p> <p>A) for loop B) while loop C) end loop D) break loop</p> <p>Answer: B Explanation: A while loop would repeat the jump action until a stopping condition is met.</p>
29.	<p>If a player's score increases by 5 points every time they collect a star, how many points will they have after collecting 4 stars?</p> <p>A) 10 B) 15 C) 20 D) 25</p> <p>Answer: C Explanation: 4 stars at 5 points each equals $4 * 5 = 20$ points.</p>
30.	<p>What is an animation frame in coding?</p> <p>A) A picture that does not change B) A single image in a sequence to show movement C) A coding error D) A loop that ends a program</p> <p>Answer: B Explanation: Animation frames are individual images shown in sequence to create the appearance of movement.</p>
Section 4: Achievers Section	
31.	<p>In a conditional statement, if $\text{score} > 50$ then win, what happens if $\text{score} = 50$?</p> <p>A) The player wins B) The player loses C) Nothing happens D) It's a draw</p> <p>Answer: C Explanation: The condition is "greater than 50," so exactly 50 would not meet the requirement.</p>
32.	<p>What is the output of if $x = 5$ then $x * 2$?</p> <p>A) 10 B) 7 C) 5 D) 15</p>

	<p>Answer: A Explanation: If x is 5, then $5 * 2 = 10$.</p>
33.	<p>In a sequence where every odd number is doubled and each even number is tripled, what is 3 transformed into? A) 6 B) 9 C) 8 D) 5 Answer: A Explanation: Since 3 is an odd number, doubling it gives 6.</p>
34.	<p>In a game, if each heart restores 3 health points, how much health does a player gain from 7 hearts? A) 10 B) 20 C) 21 D) 15 Answer: C Explanation: 7 hearts at 3 points each is $7 * 3 = 21$.</p>
35.	<p>In an animation, if each frame lasts for 2 seconds, how long will 5 frames last? A) 5 seconds B) 10 seconds C) 15 seconds D) 20 seconds Answer: B Explanation: 5 frames at 2 seconds each would take $5 * 2 = 10$ seconds.</p>
36	<p>If a robot repeats the pattern “forward 2, turn left” four times, what shape will it form? A) Circle B) Triangle C) Square D) Rectangle Answer: C Explanation: This pattern will create a square as the robot turns 90 degrees each time.</p>
37	<p>In an animation, what does the “frame rate” refer to? A) The number of loops B) The speed of a character C) The number of frames per second D) The brightness of the screen Answer: C Explanation: Frame rate measures how many frames are displayed per second, determining the smoothness of the animation.</p>

38	<p>If $y = 4$ and $x = y * 3$, what is the value of x?</p> <p>A) 6 B) 12 C) 8 D) 15</p> <p>Answer: B Explanation: Since $x = y * 3$ and y is 4, then x is $4 * 3 = 12$.</p>
39	<p>What is a “loop counter” used for in coding?</p> <p>A) To break the loop B) To count the number of loop iterations C) To make decisions in code D) To stop the loop instantly</p> <p>Answer: B Explanation: A loop counter keeps track of how many times a loop has been executed.</p>
40	<p>Which of these best describes an algorithm?</p> <p>A) A group of characters B) A list of instructions to solve a problem C) An error message D) A variable</p> <p>Answer: B Explanation: An algorithm is a series of steps designed to solve a problem.</p>

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