

# SCO INTERNATIONAL CODING OLYMPIAD

## CLASS 5 QUESTION PAPER SET A

Reviewed practice edition with answer key, explanations, and skill-wise coding questions

**Designed for Class 5 learners and aligned with SCO's guided preparation, practice, reporting, and future-ready coding-skill development.**

- class-fit coding concepts across Python, Scratch, HTML, CSS, Java basics, algorithms, and debugging
- single-correct-answer MCQs with clean code snippets and learner-friendly explanations
- reviewed structure suitable for schools, teachers, students, and website learning resources

Coding	Python	Scratch	HTML / CSS	Algorithms
Debugging	Web Basics	Java	Logic	Practice

# SCO INTERNATIONAL CODING OLYMPIAD

**Class 5 • Question Paper Set A • Reviewed Edition**

**Total Questions: 40 | Recommended Time: 60 Minutes | Calculator: Not Allowed**

## Guidelines for the Candidate

1. Before starting, fill in the required personal details carefully if the paper is being used in printed format.
2. There are 40 multiple-choice questions. Each question has only one correct answer.
3. Read each code snippet carefully. Pay special attention to data type, indentation, sequence, and closing tags.
4. Use the answer key and explanation section for learning, revision, and teacher-guided discussion after attempting the paper.
5. Calculator use is not required. Rough work may be done separately or in the space provided by the school.

## Section: Fundamentals of Coding

**Q1**

**What is a variable in computer programming?**

- A. A fixed number that never changes
- B. A type of computer hardware
- C. A named container that stores data or values
- D. A programming language

**Answer: C. A named container that stores data or values**

**Explanation:** A variable is like a named container. It can hold information such as a number, word, score, name, or other value that a program can use and update.

**Q2**

**Which data type is used to represent whole numbers without decimal points?**

- A. String
- B. Integer
- C. Boolean
- D. Float

**Answer: B. Integer**

**Explanation:** An integer represents whole numbers such as 0, 5, 18, or 2026. It does not include decimal parts.

**Q3**

**What will the following Python code print?**

```
message = "Hello, Class 5!"  
print(message)
```

- A. Hello, Class 5!
- B. message
- C. "Hello, Class 5!" including the quotation marks
- D. Error

**Answer: A. Hello, Class 5!**

**Explanation:** The variable message stores the text Hello, Class 5!. The print statement displays the value stored inside the variable, not the variable name.

Q4

Consider this Python code:

```
a = 5  
b = 3  
print(a + b)
```

What is the output?

- A. 53
- B. 15
- C. Error
- D. 8

**Answer: D. 8****Explanation:** Both values are integers. The + operator performs addition, so 5 + 3 equals 8.

Q5

Find the error in the following Python code:

```
num = 10  
print(numm)
```

- A. The variable num is not defined
- B. The variable numm is misspelled
- C. The print statement is incorrect
- D. There is no error

**Answer: B. The variable numm is misspelled****Explanation:** The variable was created with the name num, but the code tries to print numm. Python treats these as two different names.

Q6

What will the following Python code print?

```
x = "7"  
y = 3  
print(int(x) + y)
```

- A. "73"
- B. 73
- C. Error
- D. 10

**Answer: D. 10****Explanation:** The value "7" is a string, but int(x) converts it into the integer 7. Then 7 + 3 equals 10.

Q7

In Scratch programming, what is a sprite?

### Scratch sprite + sequence



when flag clicked

move 100 steps

say Hello

- A. A background image only
- B. A type of sound effect
- C. A character or object that can be programmed to move and interact
- D. A text file

**Answer: C. A character or object that can be programmed to move and interact**

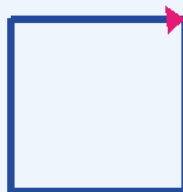
**Explanation:** A sprite is an object or character in Scratch. A student can attach blocks to a sprite to make it move, speak, change costume, or respond to events.

Q8

A student writes a drawing loop in Python Turtle:

```
import turtle
t = turtle.Turtle()
for i in range(4):
    t.forward(100)
    t.left(90)
print("Square drawn")
```

### Turtle loop draws a square



```
for i in range(4):
    forward(100)
    left(90)
```

What does this code do?

- A. Draws a square and prints Square drawn
- B. Draws a circle
- C. Draws a square but prints nothing
- D. Produces an indentation error

**Answer: A. Draws a square and prints Square drawn**

**Explanation:** The loop runs 4 times. Each time, the turtle moves forward and turns 90 degrees, forming the four sides of a square. The final print statement displays Square drawn.

Q9

**Identify the error in this function meant to add two values safely:**

```
def combine(a, b):  
    return a + b  
  
print(combine(4, "3"))
```

- A. The function combine is defined incorrectly
- B. Adding an integer and a string directly causes a TypeError
- C. There is no error; it prints 43
- D. The function should use multiplication

**Answer: B. Adding an integer and a string directly causes a TypeError****Explanation:** In Python, 4 is an integer and "3" is a string. They cannot be added directly as numbers. The string must be converted first, for example `int("3")`.

Q10

**A student creates a simple calculator program:**

```
def add(x, y):  
    return x + y  
  
def subtract(x, y):  
    return x - y  
  
print("Result:", add(10, subtract(5, 3)))
```

What is the output?

- A. Result: 8
- B. Result: 10
- C. Result: 12
- D. Result: 6

**Answer: C. Result: 12****Explanation:** First `subtract(5, 3)` gives 2. Then `add(10, 2)` gives 12, so the program prints Result: 12.

## Section: Programming Logic and Debugging

Q11

**What will be the output of this Python code?**

```
x = 7  
x = x + 3  
print(x)
```

- A. 7
- B. 10
- C. 73
- D. Error

**Answer: B. 10****Explanation:** The second line updates x by adding 3 to its old value. The new value is  $7 + 3 = 10$ .

Q12

**What is the main error in the following Python code?**

```
a = 5
b = "2"
print(a - b)
```

- A. The variable a should be printed first
- B. The print statement is missing parentheses
- C. Subtraction is being attempted between an integer and a string
- D. There is no error

**Answer: C. Subtraction is being attempted between an integer and a string****Explanation:** Python can subtract numbers from numbers, but b is a string. To subtract, b must be converted with int(b).

Q13

**A student is creating a simple HTML page to display a greeting message. Which is the complete and well-formed HTML snippet?****A.**

```
<html>
<body>
<h1>Hello, World!</h1>
</body>
```

**B.**

```
<html>
<h1>Hello, World!</h1>
</html>
```

**C.**

```
<body>
<h1>Hello, World!</h1>
</body>
```

**D.**

```
<html>
<body>
<h1>Hello, World!</h1>
</body>
</html>
```

**Answer: D. <html>**

```
<body>
<h1>Hello, World!</h1>
</body>
</html>
```

**Explanation:** Option D includes the html and body elements and closes both tags properly. That makes it the most complete and well-formed snippet.

Q14

Identify the error in the following HTML snippet:

```
<p>Welcome to our website
```

A.

The paragraph tag `<p>` is not closed properly

B. The text is not enclosed in quotes

C.

The `<p>` tag is invalid

D. There is no error

**Answer: A. The paragraph tag `<p>` is not closed properly****Explanation:** A paragraph should normally be closed with `</p>`. The corrected snippet is `<p>Welcome to our website</p>`.

Q15

Which CSS rule correctly sets the text color of all `<h1>` elements to blue?

A.

```
h1 { text-color: blue; }
```

B.

```
.h1 { background-color: blue; }
```

C.

```
h1 { color: blue; }
```

D.

```
h1 { font-blue: true; }
```

**Answer: C. `h1 { color: blue; }`****Explanation:** In CSS, `color` changes the text color. The selector `h1` targets all `h1` elements.

Q16

Consider the following CSS code:

```
p.intro { font-size: 16px; }
```

Which HTML snippet will apply this style correctly?

A.

```
<p id="intro">Hello</p>
```

B.

```
<p class="intro">Hello</p>
```

C.

```
<div class="intro">Hello</div>
```

D.

```
<p>intro</p>
```

**Answer: B. <p class="intro">Hello</p>****Explanation:** The CSS selector p.intro means a p element with class="intro". Option B matches both conditions.

Q17

Find the error in the following Python code:

```
text = 'Hello, World!  
print(text)
```

A. The print function is written incorrectly

B. There is no error

C. The variable name is incorrect

D. The string is missing a closing quote

**Answer: D. The string is missing a closing quote****Explanation:** The string starts with a single quote but never closes it. Python will report a syntax error.

Q18

In Scratch, a student wants a sprite to move 100 steps and then say Hello. Which sequence of blocks correctly achieves this?

**Scratch sprite + sequence**



- when flag clicked
- move 100 steps
- say Hello

A.

B.

C.

D.

**Answer: A. move 100 steps -> say Hello**

**Explanation:** Programs run in sequence. The sprite should first move 100 steps and then say Hello.

Q19

A student writes the following Python code for a simple counter:

```
def counter(n):  
    count = 0  
    for i in range(n):  
        count += 1  
    return count  
  
print(counter("5"))
```

What is the error?

A. The function counter is defined incorrectly

B.

C. The variable count is not initialized

D. There is no error

**Answer: B. range(n) receives a string instead of an integer**

**Explanation:** range() needs an integer. Here n is "5", which is a string. Using int("5") would fix the issue.

Q20

**A student writes the following code to print a welcome message:**

```
name = "Sam"  
age = 10  
print("Welcome, " + name + ". You are " + age + " years old.")
```

What is the error, and how can it be fixed?

- A. The variable name is not defined
- B. There is no error
- C. age is an integer and must be converted to a string using `str(age)`
- D. The + operator can never be used with strings

**Answer: C. age is an integer and must be converted to a string using `str(age)`****Explanation:** Python cannot directly join a string and an integer using +. A correct form is: `print("Welcome, " + name + ". You are " + str(age) + " years old.")`.

## Section: Computer, Algorithm, Web and Language Basics

Q21

**Which statement best describes a computer?**

- A. A device that only displays images
- B. A machine that can process data and perform tasks using instructions
- C. A tool used only for writing
- D. A device that stores only music

**Answer: B. A machine that can process data and perform tasks using instructions****Explanation:** A computer takes input, processes data using instructions, stores information, and gives output.

Q22

**What is an algorithm?**

- A. A type of computer hardware
- B. A programming language
- C. A graphical user interface
- D. A step-by-step procedure for solving a problem

**Answer: D. A step-by-step procedure for solving a problem****Explanation:** An algorithm is a clear list of steps that solves a problem or completes a task.

Q23

**Which statement best describes Java?**

- A. Java is a markup language used to create web pages
- B. Java is a database management system
- C. Java is a high-level, object-oriented programming language that commonly runs on the Java Virtual Machine
- D. Java is only used for animations

**Answer: C. Java is a high-level, object-oriented programming language that commonly runs on the Java Virtual Machine****Explanation:** Java is a programming language. Java programs are commonly compiled into bytecode and run using the Java Virtual Machine.

Q24

**Which of the following correctly describes Python?**

- A. Python is a high-level, interpreted programming language known for readable syntax
- B. Python is a low-level assembly language
- C. Python is a database query language only
- D. Python is used only for web page design

**Answer: A. Python is a high-level, interpreted programming language known for readable syntax****Explanation:** Python is a high-level language with readable syntax. It is widely used in education, automation, web development, data work, and more.

Q25

**Which option best explains the difference in typing between Python and Java?**

- A. Both are statically typed languages
- B. Python requires explicit type declarations, while Java does not
- C. Both are dynamically typed languages
- D. Python is dynamically typed, whereas Java is statically typed

**Answer: D. Python is dynamically typed, whereas Java is statically typed****Explanation:** In Python, a variable type is decided while the program runs. In Java, variable types are normally declared before the program runs.

Q26

**What is the output of the following Python code?**

```
x = 10
y = 5
print("Sum:", x + y)
```

- A. Sum: 105
- B. Sum: 15
- C. Sum: 10 5
- D. Error

**Answer: B. Sum: 15****Explanation:** The values 10 and 5 are added to make 15. The print function displays Sum: 15.

Q27

**Identify the error in this Python code:**

```
if x > 5
    print("x is greater than 5")
```

- A. Missing colon (:) after if x > 5
- B. The condition is mathematically impossible
- C. The print function is misspelled
- D. There is no error

**Answer: A. Missing colon (:) after if x > 5****Explanation:** Python if statements require a colon at the end of the condition: if x > 5:.

Q28

**What does HTML stand for?**

- A. HighText Machine Language
- B. Home Tool Markup Language
- C. HyperText Markup Language
- D. Hyperlinking and Text Management Language

**Answer: C. HyperText Markup Language****Explanation:** HTML stands for HyperText Markup Language. It structures the content of web pages.

Q29

Which HTML snippet displays a main heading with the text Welcome?

A.

```
<heading>Welcome</heading>
```

B.

```
<h1>Welcome</h1>
```

C.

```
<head>Welcome</head>
```

D.

```
<title>Welcome</title>
```

**Answer: B. <h1>Welcome</h1>****Explanation:** The h1 element is used for a main visible heading on a webpage. The title element sets the browser/page title and is not the visible heading.

Q30

Which HTML snippet correctly creates a clickable link with the visible text Visit SCO?

A.

```
<link>Visit SCO</link>
```

B.

```
<a>https://schoolconnectonline.com</a>
```

C.

```
<p href="https://schoolconnectonline.com">Visit SCO</p>
```

D.

```
<a href="https://schoolconnectonline.com">Visit SCO</a>
```

**Answer: D. <a href="https://schoolconnectonline.com">Visit SCO</a>****Explanation:** The anchor tag <a> creates a link, and the href attribute stores the destination URL.

## Section: Advanced Reasoning and Applied Coding Concepts

Q31

What does CSS stand for?

- A. Cascading Style Sheets
- B. Computer Style Sheets
- C. Creative Style Sheets
- D. Colorful Style Sheets

**Answer: A. Cascading Style Sheets****Explanation:** CSS stands for Cascading Style Sheets. It controls presentation, such as colors, spacing, fonts, and layout.

Q32

**Given the following CSS rule, what does it do?**

```
p { font-size: 18px; color: green; }
```

- A. It sets the background color of paragraphs to green
- B. It sets paragraph text size to 18 pixels and paragraph text color to green
- C. It changes only the paragraph font family
- D. It sets the border color of paragraphs to green

**Answer: B. It sets paragraph text size to 18 pixels and paragraph text color to green****Explanation:** The selector p targets all paragraph elements. font-size controls text size, and color controls text color.

Q33

**Identify the issue in the following CSS selector:**

```
h7 { color: red; }
```

- A. There is no issue; h7 is a standard HTML heading tag
- B. The color property is misspelled
- C. HTML standard heading elements are h1 through h6, so h7 should not be used as a heading tag
- D. The selector must be uppercase

**Answer: C. HTML standard heading elements are h1 through h6, so h7 should not be used as a heading tag****Explanation:** HTML defines heading elements from h1 to h6. For a heading after h6, use proper heading structure and style it with CSS instead of inventing h7.

Q34

**What is the main error in the following Java code snippet?**

```
public class Main {  
    public static void main(String args) {  
        System.out.println("Hello");  
    }  
}
```

- A. The main method should use String[] args instead of String args
- B. The class name is always required to be Test
- C. System.out.println is misspelled
- D. There is no error

**Answer: A. The main method should use String[] args instead of String args****Explanation:** A standard Java entry point uses public static void main(String[] args). The parameter is an array of strings, not a single String.

Q35

**What will be the output of the following Java code?**

```
public class Test {  
    public static void main(String[] args) {  
        String a = "Hello";  
        String b = "World";  
        System.out.println(a + " " + b);  
    }  
}
```

- A. HelloWorld
- B. Hello World
- C. "Hello" "World"
- D. Error due to incorrect concatenation

**Answer: B. Hello World****Explanation:** The + operator joins strings in Java. The expression also adds a space between Hello and World.

Q36

**What is the key difference between == and is in Python?**

- A. Both always check the same thing
- B. is checks value equality, while == checks object identity
- C. is is used only for strings
- D. == checks value equality, while is checks object identity

**Answer: D. == checks value equality, while is checks object identity****Explanation:** The == operator compares whether values are equal. The is operator checks whether two names refer to the exact same object in memory.

Q37

**Find the error in this Python code:**

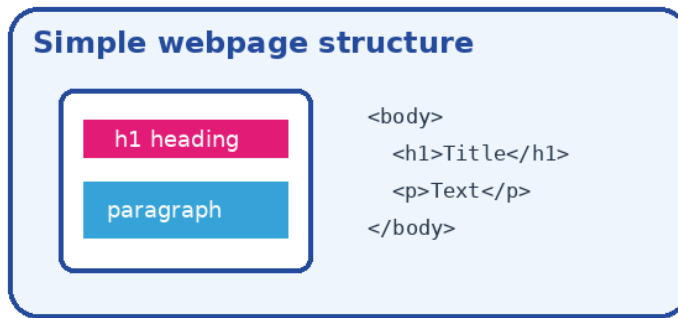
```
num = 10
text = "The number is: " + num
print(text)
```

- A. The concatenation operator is used with different types without conversion
- B. The variable num should be declared with var
- C. The print statement is missing parentheses
- D. There is no error

**Answer: A. The concatenation operator is used with different types without conversion****Explanation:** A string and an integer cannot be joined directly using +. A correct version is "The number is: " + str(num).

Q38

A student is creating a simple webpage to display a portfolio heading and one paragraph. Which option correctly places both visible elements inside the body and uses an `<h1>` heading?



**A.**

```
<html>
<head><title>My Portfolio</title></head>
<header>My Portfolio</header>
<p>Welcome to my portfolio website.</p>
</html>
```

**B.**

```
<html>
<head><title>My Portfolio</title></head>
<body>
<h1>My Portfolio</h1>
<p>Welcome to my portfolio website.</p>
</body>
</html>
```

**C.**

```
<html>
<body>
<header>My Portfolio</header>
<p>Welcome to my portfolio website.
</body>
</html>
```

**D.**

```
<body>
<title>My Portfolio</title>
<h1>Welcome</h1>
</body>
```

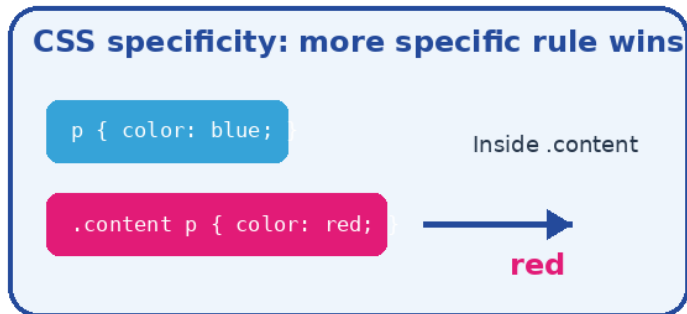
**Answer: B.** `<html>`  
`<head><title>My Portfolio</title></head>`  
`<body>`  
`<h1>My Portfolio</h1>`  
`<p>Welcome to my portfolio website.</p>`  
`</body>`  
`</html>`

**Explanation:** Option B has the main visible heading as `<h1>` and the paragraph inside the body. It also properly closes the tags.

Q39

A student writes the following CSS to style paragraphs:

```
p { color: blue; }
.content p { color: red; }
```



If a <p> element is inside an element with class content, what color will it be?

- A. Blue
- B. Black
- C. It depends only on browser defaults
- D. Red

**Answer: D. Red**

**Explanation:** The rule .content p is more specific than p. Therefore, a paragraph inside an element with class content will be red.

Q40

A student creates a Python Turtle program to draw a triangle, but the window closes immediately after the drawing is completed:

```
import turtle
t = turtle.Turtle()
for _ in range(3):
    t.forward(100)
    t.left(120)
```

What is the most suitable fix?

- A. Run the loop 4 times
- B. Use a 90-degree angle
- C. Add turtle.done() at the end to keep the window open
- D. Import the Turtle module twice

**Answer: C. Add turtle.done() at the end to keep the window open**

**Explanation:** The drawing is correct for a triangle, but in many script environments the window may close immediately. Adding turtle.done() keeps the Turtle window open.

## Answer Key Summary

Q	Ans	Q	Ans	Q	Ans	Q	Ans
1	C	11	B	21	B	31	A
2	B	12	C	22	D	32	B
3	A	13	D	23	C	33	C
4	D	14	A	24	A	34	A
5	B	15	C	25	D	35	B
6	D	16	B	26	B	36	D
7	C	17	D	27	A	37	A
8	A	18	A	28	C	38	B
9	B	19	B	29	B	39	D
10	C	20	C	30	D	40	C

## Skill Coverage Map

Question Range	Primary Skill Area	Learning Focus
Q1-Q10	<b>Fundamentals of Coding</b>	Variables, data types, simple output, Scratch sprite logic, Turtle loops, and function flow
Q11-Q20	<b>Programming Logic and Debugging</b>	Assignment updates, type errors, HTML/CSS matching, syntax errors, and sequence-based reasoning
Q21-Q30	<b>Computer, Algorithm, Web and Language Basics</b>	Computer basics, algorithm meaning, Python/Java identity, HTML structure, heading, and link usage
Q31-Q40	<b>Advanced Applied Concepts</b>	CSS rules and specificity, Java main method, string concatenation, Python identity, and Turtle program completion