



SCO INTERNATIONAL CODING OLYMPIAD CLASS 6 QUESTION PAPER

Official Question Paper Set A

Official SCO cover format with academic, PDF-ready question layout.

- Designed for Class 6 learners building programming, web and game-development foundations.
- Compact question numbering, clean question blocks, answer key and explanations for website download.
- Aligned to age-appropriate computational thinking, algorithms, HTML/CSS, Python/Java concepts and safe web practices.

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|-------------------|------------|-----------|---------------|-------------|--|
| Intro Programming | Python | Java | HTML | Game Basics | |
| Algorithms | Web Basics | Debugging | Data Thinking | SCO | |

SCO International Coding Olympiad | Duration: 60 minutes | Type: Objective MCQ | Total Questions: 45

| Candidate Field | To be completed by student |
|-----------------------|----------------------------|
| Name | |
| Registration ID | |
| School / Organization | |

Section 1 - Intro to Programming

Q1. What is the full form of CPU in a computer?

- A. Central Process Unit
- B. Central Processing Unit
- C. Computer Process Unit
- D. Central Programming Unit

Q2. Which of the following is NOT an operating system?

- A. Windows
- B. Linux
- C. Google Chrome
- D. macOS

Q3. What will be the output of the following Java program?

```
public class Hello {  
    public static void main(String[] args) {  
        System.out.println("Welcome to Java!");  
    }  
}
```

- A. Welcome to Java!
- B. Hello, Java!
- C. Compilation Error
- D. No Output

Q4. Which of the following is true about Python?

- A. Python is a high-level language
- B. Python is used in artificial intelligence
- C. Python uses indentation instead of curly braces
- D. All of the above

Q5. What does HTML stand for?

- A. Hyperlinks and Text Markup Language
- B. Hyper Text Markup Language
- C. High-Level Text Markup Language
- D. Hyper Transfer Markup Language

Q6. In Python, what will be the output of the following code?

```
print(5 + "5")
```

- A. 10
- B. 55
- C. Error
- D. 5.5

Q7. What is the difference between Java and Python?

- A. Java is compiled, Python is interpreted
- B. Java is slower than Python
- C. Python uses curly braces, Java uses indentation
- D. Python does not support loops

Q8. Find the error in the following Java code:

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

- A. No error
- B. Missing semicolon
- C. String args should be String[] args
- D. System.out.println should be system.out.println

Q9. In HTML, which tag is used to insert an image?

- A.
- B. <image>
- C. <picture>
- D. <src>

Q10. Which of the following is a valid CSS property?

- A. font-size
- B. text-bold
- C. border-color
- D. Both A and C

Q11. Identify the error in this Python code:

```
for i in range(5)  
    print(i)
```

- A. No error
- B. range(5) should be range(0,5)
- C. Missing colon : after range(5)
- D. Indentation error

Q12. What does CSS stand for?

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

Q13. Which of the following is not a valid HTML tag?

- A. <title>
- B. <h7>
- C. <p>
- D. <table>

Q14. What is the correct way to define a function in Python?

- A. define myFunction()
- B. def myFunction():
- C. function myFunction():
- D. fun myFunction()

Q15. Which of the following is an invalid variable name in Java?

- A. int number;
- B. int _value;
- C. int 3days;
- D. int myVar;

Section 2 - Basic Coding Applications

Q16. Which of the following is NOT a Java data type?

- A. int
- B. string
- C. boolean
- D. float

Q17. Which SQL command is commonly used to retrieve data and can contain a subquery?

- A. SELECT
- B. HAVING
- C. GROUP BY
- D. WHERE

Q18. What will be the output of this Python code?

```
x = "Python"  
y = "Java"  
print(x + y)
```

- A. Python Java
- B. PythonJava
- C. Error
- D. None

Q19. How do you change the background color of a webpage using CSS?

- A. bg-color: red;
- B. background-color: red;
- C. color: background red;
- D. bgcolor: red;

Q20. Identify the error in this Python code:

```
x = 5  
if x > 2  
    print("X is greater than 2")
```

- A. No error
- B. Missing : after if x > 2
- C. print should be inside a function
- D. Indentation error

Q21. Which of the following best describes an algorithm?

- A. A detailed step-by-step procedure to solve a problem
- B. A programming language used for web development

- C. A type of computer hardware
- D. A method to compile code

Q22. Consider the following Python code:

```
def greet(name):  
print("Hello, " + name)  
greet("Alice")
```

What is the error in this code?

- A. The function name is incorrect.
- B. There is a missing colon after the function definition.
- C. The print statement is not indented correctly.
- D. The string concatenation is invalid.

Q23. Which of the following statements is true regarding the differences between Java and Python?

- A. Java uses indentation to define code blocks, while Python uses curly braces.
- B. Python is dynamically typed, whereas Java is statically typed.
- C. Java does not require semicolons, but Python does.
- D. Both Java and Python compile code before running.

Q24. What is the correct signature for the main method in a Java program?

- A. public static void main(String args)
- B. public void main(String[] args)
- C. public static void main(String[] args)
- D. static void main(String args[])

Q25. Identify the error in the following Python code:

```
x = 10  
if x > 5  
    print("x is greater than 5")
```

- A. Missing parentheses around the condition.
- B. The if statement should be followed by a colon (:).
- C. x should be defined as a string.
- D. There is no error.

Q26. Which of the following HTML snippets is correctly nested?

- A. <div><p>Paragraph</div></p>
- B. <div><p>Paragraph</p></div>
- C. <div><p>Paragraph</div>
- D. <p><div>Paragraph</p></div>

Q27. In CSS, if you have the following rules:

```
p { color: blue; }  
#header p { color: red; }
```

What color will the text in a <p> inside an element with id "header" be?

- A. Blue
- B. Red
- C. Black
- D. Inherits from the parent

Q28. Find the error in the following code:

```
numbers = [1, 2, 3, 4, 5]
result = [x*2 for x in numbers if y > 2]
print(result)
```

- A. The list comprehension is correct.
- B. The variable `y` is not defined; it should be `x > 2`.
- C. The multiplication operator should be replaced with addition.
- D. The if condition is unnecessary.

Q29. Which of the following correctly illustrates the difference in variable declaration between Python and Java?

- A. In Python, you declare variables using `int x = 10;` and in Java using `x = 10`.
- B. In Python, variables do not require a data type declaration, while in Java, you must specify the type (e.g., `int x = 10;`).
- C. Both Python and Java require data type declarations.
- D. Java variables are dynamically typed, while Python variables are statically typed.

Q30. Which of the following is considered a semantic HTML tag?

- A. `<div>`
- B. ``
- C. `<header>`
- D. ``

Section 3 - Game Development Basics and Code Analysis

Q31. Which of the following properties is NOT part of the CSS box model?

- A. Padding
- B. Margin
- C. Border
- D. Font-size

Q32. What is the error in the following Java code?

```
public class Main {
    public static void main(String[] args) {
        int number = 10
        System.out.println("Number is " + number);
    }
}
```

- A. The class name is incorrect.
- B. Missing semicolon after `int number = 10`.
- C. `System.out.println` is spelled incorrectly.
- D. The main method signature is wrong.

Q33. Find the error in the following Python code:

```
name = "Alice"
age = 12
print("Name: %s, Age: %d" % (name, age))
```

- A. The format specifiers are incorrect.
- B. The code is correct.
- C. The variables should be concatenated using `+`.

D. The age should be a string.

Q34. What error does the following Kotlin code produce?

```
var num: Int? = null
println(num!! + 5)
```

- A. It prints "5".
- B. It prints "null5".
- C. It throws a NullPointerException due to force unwrapping a null.
- D. It compiles but does not run.

Q35. Identify the error and its consequence in the following code:

```
def collect_data(item, data_list=[]):
    data_list.append(item)
    return data_list
print(collect_data(1))
print(collect_data(2))
```

- A. It outputs [1] and then [1, 2] because the default list is shared.
- B. It outputs [1] and [2] because a new list is created every time.
- C. It throws an error due to type mismatch.
- D. It outputs an empty list each time.

Q36. Examine the following HTML snippet:

```
<div class=header>Welcome!</div>
```

Which improvement is recommended for professional, standards-friendly HTML?

- A. The tag name should be changed.
- B. The attribute value should be enclosed in quotes.
- C. The <div> tag is not closed.
- D. There is no recommended improvement.

Q37. Given the following CSS:

```
p { color: blue; }
#main p { color: red; }
```

Which color will the text inside <p> in an element with id "main" be, and why?

- A. Blue, because the element selector is lower specificity.
- B. Red, because the ID selector has higher specificity.
- C. Blue, because inline styles override all.
- D. It depends on the browser.

Q38. Consider this Java code:

```
class Animal {
    void sound() {
        System.out.println("Some sound");
    }
}
class Dog extends Animal {
    void sound() {
        System.out.println("Bark");
    }
}
public class Main {
```

```
public static void main(String[] args) {  
    Animal myDog = new Dog();  
    myDog.sound();  
}  
}
```

What is the output, and why is method overriding important here?

- A. "Some sound"; because the reference is of type Animal.
- B. "Bark"; because the actual object is of type Dog, and overriding enables dynamic binding.
- C. "Bark"; but it causes a compile error.
- D. "Some sound"; because Java does not support method overriding.

Q39. Examine the code:

```
letters = ['a', 'b', 'c']  
print(letters[3])
```

What is the error?

- A. The list index is out-of-range.
- B. The list syntax is incorrect.
- C. The variable letters is undefined.
- D. There is no error.

Q40. A web developer creates an HTML file with the following snippet:

```
<!DOCTYPE html>  
<html>  
<head>  
    <title>My Page</title>  
    <style>  
        .highlight { background-color: yellow; }  
    </style>  
</head>  
<body>  
    <p class="highlight">Hello, World!</p>  
    <p class=highlight>Welcome to my page.</p>  
</body>  
</html>
```

Which improvement should be made for more consistent, professional HTML?

- A. The <p> tags should not be closed.
- B. The second class attribute value should be enclosed in quotes.
- C. The CSS rule is invalid.
- D. The document must remove the <!DOCTYPE html> declaration.

Achievers Section

Q41. A small game stores a player score in Python. What will this code print?

```
score = 0  
for coin in range(3):  
    score += 10  
print(score)
```

- A. 10
- B. 20
- C. 30
- D. 40

Q42. In Scratch-style game design, what does collision detection mean?

- A. Checking whether two game objects touch or overlap
- B. Changing the background color
- C. Counting the number of code blocks
- D. Saving a file on the computer

Q43. Which Python code creates a list of squares from 1 to 5?

- A. `squares = [x * 2 for x in range(1, 6)]`
- B. `squares = [x**2 for x in range(1, 6)]`
- C. `squares = range(1, 6)**2`
- D. `squares = [2**x for x in range(1, 6)]`

Q44. Which HTML and CSS pair correctly connects a paragraph to a class named warning?

- A. `<p class="warning">Text</p>` and `.warning { color: red; }`
- B. `<p id="warning">Text</p>` and `.warning { color: red; }`
- C. `<warning>Text</warning>` and `p { warning: red; }`
- D. `<p style="warning">Text</p>` and `#warning { color: red; }`

Q45. A Java program needs to store whether a game is over or not. Which data type is best?

- A. int
- B. String
- C. boolean
- D. double

Answer Key

| Q | Ans | Correct Option |
|----|-----|--|
| 1 | B | Central Processing Unit |
| 2 | C | Google Chrome |
| 3 | A | Welcome to Java! |
| 4 | D | All of the above |
| 5 | B | Hyper Text Markup Language |
| 6 | C | Error |
| 7 | A | Java is compiled, Python is interpreted |
| 8 | C | String args should be String[] args |
| 9 | A | |
| 10 | D | Both A and C |
| 11 | C | Missing colon : after range(5) |
| 12 | B | Cascading Style Sheet |
| 13 | B | <h7> |
| 14 | B | def myFunction(): |
| 15 | C | int 3days; |
| 16 | B | string |
| 17 | C | GROUP BY |
| 18 | B | PythonJava |
| 19 | B | background-color: red; |
| 20 | B | Missing : after if x > 2 |
| 21 | A | A detailed step-by-step procedure to solve a problem |
| 22 | C | The print statement is not indented correctly. |
| 23 | B | Python is dynamically typed, whereas Java is statically typed. |
| 24 | C | public static void main(String[] args) |
| 25 | B | The if statement should be followed by a colon (:). |
| 26 | B | <div><p>Paragraph</p></div> |
| 27 | B | Red |
| 28 | B | The variable y is not defined; it should be x > 2. |
| 29 | B | In Python, variables do not require a data type declaration, while in Java, you must specify the type (e.g., int x = 10);. |
| 30 | C | <header> |
| 31 | D | Font-size |
| 32 | B | Missing semicolon after int number = 10. |
| 33 | B | The code is correct. |
| 34 | C | It throws a NullPointerException due to force unwrapping a null. |
| 35 | A | It outputs [1] and then [1, 2] because the default list is shared. |
| 36 | B | The attribute value should be enclosed in quotes. |
| 37 | B | Red, because the ID selector has higher specificity. |
| 38 | B | "Bark"; because the actual object is of type Dog, and overriding enables dynamic binding. |
| 39 | A | The list index is out-of-range. |
| 40 | B | The second class attribute value should be enclosed in quotes. |
| 41 | C | 30 |
| 42 | A | Checking whether two game objects touch or overlap |
| 43 | B | squares = [x**2 for x in range(1, 6)] |
| 44 | A | <p class="warning">Text</p> and .warning { color: red; } |
| 45 | C | boolean |

Detailed Explanations

Q1. Answer B: Central Processing Unit

CPU stands for Central Processing Unit, the main processing component that carries out instructions in a computer.

Q2. Answer C: Google Chrome

Google Chrome is a web browser, while Windows, Linux and macOS are operating systems.

Q3. Answer A: Welcome to Java!

The Java program calls `System.out.println` with the exact string "Welcome to Java!", so that text is printed.

Q4. Answer D: All of the above

Python is a high-level language, is widely used in AI, and uses indentation to define code blocks.

Q5. Answer B: Hyper Text Markup Language

HTML stands for Hyper Text Markup Language, the language used to structure web page content.

Q6. Answer C: Error

In Python, adding an integer to a string with `+` causes a `TypeError` because the values are different incompatible types.

Q7. Answer A: Java is compiled, Python is interpreted

Java source is compiled into bytecode for the JVM, while Python is commonly executed by an interpreter at runtime.

Q8. Answer C: String args should be String[] args

The Java main method parameter should be `String[] args`, not `String args`, so the runtime can pass command-line arguments correctly.

Q9. Answer A:

The HTML `` element is used to embed an image; the `src` attribute gives the image URL.

Q10. Answer D: Both A and C

Both `font-size` and `border-color` are valid CSS properties; `text-bold` is not a standard CSS property.

Q11. Answer C: Missing colon : after range(5)

A Python for statement must end with a colon before the indented loop body.

Q12. Answer B: Cascading Style Sheet

CSS stands for Cascading Style Sheet or Cascading Style Sheets and is used to style web pages.

Q13. Answer B: <h7>

HTML defines heading tags from `<h1>` to `<h6>`; `<h7>` is not a standard heading tag.

Q14. Answer B: def myFunction():

Python functions are defined with the `def` keyword followed by the function name, parentheses and a colon.

Q15. Answer C: int 3days;

Java variable names cannot begin with a digit, so `3days` is invalid.

Q16. Answer B: string

Java uses `String` with a capital S as a class; lowercase `string` is not a Java data type.

Q17. Answer C: GROUP BY

Python is widely used for AI because of its readable syntax and strong ecosystem of data and machine learning libraries.

Q18. Answer B: PythonJava

The `+` operator concatenates the two Python strings, producing `PythonJava` without an extra space.

Q19. Answer B: background-color: red;

The CSS property `background-color` is used to set the background color of an element or page.

Q20. Answer B: Missing : after if x > 2

A Python if statement must end with a colon before the indented block.

Q21. Answer A: A detailed step-by-step procedure to solve a problem

An algorithm is a clear step-by-step procedure for solving a problem or completing a task.

Q22. Answer C: The print statement is not indented correctly.

The statement inside the function must be indented; otherwise Python raises an indentation error.

Q23. Answer B: Python is dynamically typed, whereas Java is statically typed.

Python variables are dynamically typed, while Java variables normally require a declared type.

Q24. Answer C: public static void main(String[] args)

The standard Java entry point is public static void main(String[] args).

Q25. Answer B: The if statement should be followed by a colon (:).

The if statement in Python requires a colon after the condition.

Q26. Answer B: `<div><p>Paragraph</p></div>`

The `<p>` element opens and closes inside the `<div>`, so the nesting order is correct.

Q27. Answer B: Red

The ID selector `#header p` is more specific than the general `p` selector, so it overrides the blue rule.

Q28. Answer B: The variable y is not defined; it should be `x > 2`.

The list comprehension uses `y` in the condition, but `y` is not defined; the intended variable is `x`.

Q29. Answer B: In Python, variables do not require a data type declaration, while in Java, you must specify the type (e.g., `int x = 10;`).

Python does not require an explicit type declaration for variables, while Java uses declarations such as `int x = 10`.

Q30. Answer C: `<header>`

The `<header>` element is semantic because it describes the meaning or role of the content.

Q31. Answer D: Font-size

The CSS box model includes content, padding, border and margin; font-size is a text property, not part of the box model.

Q32. Answer B: Missing semicolon after `int number = 10`.

The Java statement `int number = 10` must end with a semicolon before the next statement.

Q33. Answer B: The code is correct.

The Python string formatting expression correctly substitutes the name and age into the string.

Q34. Answer C: It throws a `NullPointerException` due to force unwrapping a null.

The Kotlin `!!` operator force unwraps the nullable value. Since `num` is null, it throws a `NullPointerException`.

Q35. Answer A: It outputs `[1]` and then `[1, 2]` because the default list is shared.

The default list is created once and reused across calls, so the second call appends to the same list.

Q36. Answer B: The attribute value should be enclosed in quotes.

Although some HTML attributes may work unquoted, professional and standards-friendly HTML encloses attribute values in quotes.

Q37. Answer B: Red, because the ID selector has higher specificity.

The ID selector `#main p` has higher specificity than the element selector `p`, so the paragraph text becomes red.

Q38. Answer B: "Bark"; because the actual object is of type `Dog`, and overriding enables dynamic binding.

Java uses dynamic dispatch for overridden methods, so the `Dog` version of `sound()` runs even through an `Animal` reference.

Q39. Answer A: The list index is out-of-range.

The list has indices 0, 1 and 2. Accessing index 3 is out of range.

Q40. Answer B: The second class attribute value should be enclosed in quotes.

Quoting attribute values is the safest professional practice and helps avoid parsing issues if values later contain special characters or spaces.

Q41. Answer C: 30

The loop runs three times. Each time it adds 10 to score, so the final value is 30.

Q42. Answer A: Checking whether two game objects touch or overlap

Collision detection checks whether objects such as sprites, players, coins or obstacles are touching or overlapping.

Q43. Answer B: `squares = [x2 for x in range(1, 6)]`**

The expression `x**2` squares each value `x`, and `range(1, 6)` gives the numbers 1 through 5.

Q44. Answer A: `<p class="warning">Text</p>` and `.warning { color: red; }`

A class is assigned with `class="warning"` in HTML and selected with `.warning` in CSS.

Q45. Answer C: `boolean`

A boolean stores true or false values, which is suitable for a game-over condition.