

FREE PRACTICE PACK · EDITION 1

Class 10 Computer Science Olympiad practice

16 original questions + explained answers

For students preparing for SOF ICSO.

Inside this pack

Eight topic-practice questions and an eight-question, 25-minute mini-mock.

Topics selected for practice

- Python programming
- HTML and CSS
- Spreadsheets
- Database management
- Networks and security
- Computer fundamentals

How to use it

Try the practice first. Complete the mini-mock in one sitting. Check the explanations, mark mistakes, and retry them the next day.

This pack covers selected topics. It is original BodhiScore material, independent of SOF, and is not an official paper or a full-length exam. Check the official syllabus for the complete scope.

Topic practice

Work through these eight questions without a timer. Explain your choice before checking the solutions.

1. Python programming

What does this Python code print?

```
values = [2, 5, 8]
print(values[1] + values[2])
```

- | | |
|--------------|--------------|
| A. 7 | B. 10 |
| C. 15 | D. 13 |
-

2. Python programming

What is printed by this Python function call?

```
def double(n):
    return n * 2
print(double(4) + 1)
```

- | | |
|--------------|-------------|
| A. 5 | B. 9 |
| C. 10 | D. 8 |
-

3. HTML and CSS

Which selector applies a CSS rule to every element whose class attribute includes notice?

- | | |
|--------------------|-------------------|
| A. notice() | B. *notice |
| C. .notice | D. #notice |
-

Topic practice (continued)

4. HTML and CSS

Why should an informative image in HTML have meaningful alternative text?

- A.** It conveys the image's meaning to people who cannot see it
 - B.** It automatically compresses the image
 - C.** It guarantees a higher search ranking
 - D.** It changes the image's pixel dimensions
-

5. Spreadsheets

A2 contains 72. What does =IF(A2>=50,"Pass","Retry") return?

- | | |
|---------------------|----------------|
| A. TRUE only | B. Pass |
| C. Retry | D. 50 |
-

6. Spreadsheets

A spreadsheet needs the same tax rate from cell E1 in every copied formula. Which reference fixes both the row and column?

- | | |
|------------------|----------------|
| A. \$E\$1 | B. E1 |
| C. \$E1 | D. E\$1 |
-

Topic practice (continued)

7. Database management

Which field most naturally uses a numeric data type for arithmetic?

- | | |
|---|------------------------------|
| A. Postal code with leading zeroes | B. Telephone number |
| C. Product code such as A12 | D. Quantity purchased |
-

8. Database management

An Orders table stores CustomerID to link each order to a Customers table. What is CustomerID in Orders called?

- | | |
|---------------------------|---------------------------|
| A. A page header | B. A worksheet tab |
| C. A display theme | D. A foreign key |
-

Timed mini-mock

Set a 25-minute timer for these eight questions. Score 1 point per correct answer; there is no penalty for an incorrect answer. This is BodhiScore's practice scoring.

9. Networks and security

Which device routes traffic between a school's local network and another network?

- A.** Router
 - B.** Scanner
 - C.** Monitor
 - D.** Microphone
-

10. Computer fundamentals

Which example best illustrates a real-time operating system requirement?

- A.** A control system must respond within a specified deadline
 - B.** A text editor offers many fonts
 - C.** A file browser sorts names alphabetically
 - D.** A wallpaper changes each morning
-

Timed mini-mock (continued)

11. Python programming

What is printed?

```
total = 0
```

```
for n in range(1, 5):
```

```
total = total + n
```

```
print(total)
```

A. 6

B. 5

C. 10

D. 15

12. Python programming

What does `print(17 // 5, 17 % 5)` display in Python?

A. 3 0

B. 3 2

C. 3.4 2

D. 2 3

13. Spreadsheets

A1:A4 contains 3, 6, 9 and 12. What is `=SUM(A1:A4)-MAX(A1:A4)`?

A. 21

B. 12

C. 18

D. 30

Timed mini-mock (continued)

14. Database management

An inventory query should find items with Stock < 5 AND Price < 100. Which record matches?

- | | |
|------------------------------|------------------------------|
| A. Stock 7, Price 80 | B. Stock 3, Price 120 |
| C. Stock 5, Price 100 | D. Stock 3, Price 80 |
-

15. Networks and security

A student uses the same password for two services. One service suffers a password leak. Which risk increases?

- A.** The student's internet speed doubles
 - B.** An attacker may use the leaked password to try the other account
 - C.** The other account gains extra protection
 - D.** All offline documents are automatically deleted
-

16. Computer fundamentals

An image is 200 by 100 pixels. In an uncompressed representation, each pixel uses 3 bytes and there is no header. How many bytes store its pixel data?

- | | |
|------------------|------------------|
| A. 6,000 | B. 300 |
| C. 60,000 | D. 20,000 |
-

Answers and explanations

Check why the answer works, then retry any question you missed.

1. D - 13

Python list indices start at zero. `values[1]` is 5 and `values[2]` is 8, so their sum is 13.

2. B - 9

`double(4)` returns 8; adding 1 gives 9. The function doubles only its argument, not the entire expression.

3. C - .notice

A dot introduces a class selector. A hash introduces an ID selector, which has a different purpose.

4. A - It conveys the image's meaning to people who cannot see it

Alternative text gives a textual equivalent for meaningful image content, including when a screen reader is used or the image cannot load.

5. B - Pass

72 is at least 50, so IF returns its second argument, the text Pass.

6. A - \$E\$1

A dollar sign before both the column and row makes `$E$1` fully absolute when a formula is copied.

7. D - Quantity purchased

Quantities can be added or multiplied. Codes and phone numbers are identifiers rather than arithmetic values and may need text storage.

Answers and explanations (continued)

8. D - A foreign key

A foreign key references a key in another table, allowing related records to be connected.

9. A - Router

A router forwards packets between networks. The other listed devices perform input or output tasks rather than routing network traffic.

10. A - A control system must respond within a specified deadline

Real-time systems require predictable timing so that responses meet defined deadlines; appearance and sorting features do not establish this requirement.

11. C - 10

range(1, 5) produces 1, 2, 3 and 4, excluding 5. Their sum is 10.

12. B - 3 2

Integer division gives quotient 3; the remainder is 2 because $17 = 5 \times 3 + 2$.

13. C - 18

The sum is 30 and the maximum is 12. Subtracting gives 18.

14. D - Stock 3, Price 80

AND requires both conditions to be true. Only stock 3 and price 80 meet both strict less-than tests.

15. B - An attacker may use the leaked password to try the other account

Password reuse makes a leaked credential useful for attacks on other services. Separate strong passwords reduce that cross-account risk.

Answers and explanations (continued)

16. C - 60,000

There are $200 \times 100 = 20,000$ pixels. At 3 bytes each, the data occupies 60,000 bytes under the stated assumptions.

Topic scope checked against SOF syllabus: [SOF ICSO Class 10 syllabus](#)