

Practice Questions: Conditional Control Structures in Python

A. Very Short Answer

1. What is a conditional control structure in Python?
2. Write the general syntax of an if statement.
3. When is the else block executed?
4. What is the difference between if-else and if-elif-else?
5. Can an if statement exist without an else? (Yes/No)
6. What type of expression is used inside an if condition?
7. What happens if the condition in an if statement evaluates to False?
8. Why is indentation important in Python conditional statements?

B. Predict the Output

9.

```
x = 10
if x > 5:
    print("A")
else:
    print("B")
```

10.

```
x = -3
if x > 0:
    print("Positive")
elif x == 0:
    print("Zero")
else:
    print("Negative")
```

11.

```
a = 5
b = 10
if a > b:
    print(a)
else:
    print(b)
```

12.

```
x = 7
if x % 2 == 0:
    print("Even")
else:
    print("Odd")
```

13.

```
x = 15
if x > 10:
    if x < 20:
        print("Between 10 and 20")
```

C. Find the Error

14.

```
if x = 5:
    print("Hello")
```

15.

```
if x > 10  
    print("Large")
```

16.

```
if x > 0:  
    print("Positive")
```

17.

```
if x > 10:  
    print("A")  
else x > 5:  
    print("B")
```

D. Programs Using if / if-else

18. Write a program to check whether a given number is positive or negative.
19. Write a program to check whether a given number is even or odd.
20. Write a program to check whether a person is eligible to vote ($\text{age} \geq 18$).
21. Write a program to find the greater of two numbers.

E. Programs Using if-elif-else

22. Write a program to display the grade based on marks:
 $\geq 90 \rightarrow A$
 $\geq 75 \rightarrow B$
 $\geq 50 \rightarrow C$
 $< 50 \rightarrow \text{Fail}$
23. Write a program to check whether a number is positive, negative, or zero.
24. Write a program to display the day of the week based on day number (1–7).

F. Programs Using Nested if

25. Write a program to find the largest of three numbers.
26. Write a program to check whether a year is a leap year.
27. Write a program to check eligibility for admission ($\text{Age} \geq 17$ and $\text{Marks} \geq 50$).

G. Logical Operators in Conditions

28.

```
x = 10  
if x > 5 and x < 15:  
    print("Valid")
```

29.

```
x = 3  
if x < 0 or x > 10:  
    print("Out of Range")  
else:  
    print("Within Range")
```

30.

```
x = 5  
if not x > 10:  
    print("Small")
```

H. Real-Life Based Problems

31. Write a program to calculate discount:

Bill amount $\geq 5000 \rightarrow 10\%$ discount

Otherwise \rightarrow No discount

32. Write a program to check whether a given character is an alphabet, digit, or special character.

33. Write a program to generate an electricity bill based on different units consumed:

Units \leq 100 \rightarrow ₹2 per unit

Units 101-200 \rightarrow ₹3 per unit

Units 201-300 \rightarrow ₹4 per unit

Units $>$ 300 \rightarrow ₹5 per unit

34. Write a program to calculate income tax based on the following conditions:

Income \leq 2,50,000 \rightarrow No tax

Income between 2,50,001 and 5,00,000 \rightarrow 5% tax

Income above 5,00,000 \rightarrow 10% tax