Pseudo-code questions based on **logical operators** and **short-circuit evaluation** with four MCQ choices and the correct answer:

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1. Short-Circuit AND (&&) Evaluation

```
x = 10
y = 5
IF x > 0 AND y > 10 THEN
    PRINT "True"
ELSE
    PRINT "False"
END IF
```

Question: What will be printed?
- A. True
- B. False
- C. Error
- D. No output

Correct Answer: **B. False**

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2. Short-Circuit OR (||) Evaluation

```
a = 0
b = 15
IF a > 0 OR b == 15 THEN
    PRINT "True"
ELSE
    PRINT "False"
END IF
```

Question: What will be printed?
- A. True
- B. False
- C. Error
- D. No output

Correct Answer: **A. True**

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3. Using NOT Operator

```
x = 20
y = 15
IF NOT x < y THEN
    PRINT "Condition is True"
ELSE
    PRINT "Condition is False"
END IF
```

Question: What will be printed?
- A. Condition is True
- B. Condition is False
- C. Error

- D. No output

Correct Answer: **A. Condition is True**

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4. Combining AND and OR Operators

```
a = 8
b = 12
IF a > 10 OR b < 15 AND a == 8 THEN
    PRINT "Valid"
ELSE
    PRINT "Invalid"
END IF
```

Question: What will be the output?
- A. Valid
- B. Invalid
- C. Error
- D. No output

Correct Answer: **A. Valid**

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5. Short-Circuit with Complex Condition

```
x = 0
y = 5
IF x != 0 AND (y / x > 2) THEN
    PRINT "No Error"
ELSE
    PRINT "Error Detected"
END IF
```

Question: Will this code execute without error? Why?
- A. No Error
- B. Error Detected
- C. Division by zero error
- D. Undefined behavior

Correct Answer: **B. Error Detected**

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6. Using XOR (Exclusive OR) Logic

```
x = True
y = False
IF (x OR y) AND NOT (x AND y) THEN
    PRINT "XOR is True"
ELSE
    PRINT "XOR is False"
END IF
```

Question: What will be the output?
- A. XOR is True
- B. XOR is False
- C. Error
- D. No output

Correct Answer: **A. XOR is True**

7. De Morgan's Law

```
x = 7
y = 10
IF NOT (x > 5 OR y < 5) THEN
    PRINT "True"
ELSE
    PRINT "False"
END IF
```

Question: What will be printed?
- A. True
- B. False
- C. Error
- D. No output

Correct Answer: **B. False**

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8. Nested Logical Operators

```
x = 4
y = 12
z = 6
IF (x < y AND y > z) OR (x == 4 AND z < 5) THEN
    PRINT "Condition Met"
ELSE
    PRINT "Condition Not Met"
END IF
```

Question: Will "Condition Met" be printed?
- A. Yes
- B. No
- C. Error
- D. No output

Correct Answer: **A. Yes**

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9. Short-Circuit Evaluation with Functions

```
FUNCTION isEven(x)
    RETURN x % 2 == 0
END FUNCTION
a = 3
b = 6
IF isEven(a) AND isEven(b) THEN
    PRINT "Both Even"
ELSE
    PRINT "At Least One Odd"
END IF
```

Question: What will the output be?
- A. Both Even

- B. At Least One Odd
- C. Error
- D. No output

Correct Answer: **B. At Least One Odd**

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10. AND with Early Exit

x = 0
y = 5
IF x != 0 AND y / x > 2 THEN
   PRINT "No Error"
ELSE
   PRINT "Error"
END IF
Question: Does this code raise an error or print "Error"?
- A. No Error
- B. Error
- C. Division by zero error
- D. No output

Correct Answer: **B. Error**

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11. Multiple Logical Operators
x = 5
y = 15
IF (x < 10 AND y > 10) OR (x == 5) THEN
   PRINT "True"
ELSE
   PRINT "False"
END IF
Question: What will be the output?
- A. True
- B. False
- C. Error
- D. No output

Correct Answer: **A. True**

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12. Short-Circuit OR Evaluation with False Condition
x = 3
y = 2
IF x == 0 OR y > 1 THEN
   PRINT "Yes"
ELSE
   PRINT "No"
END IF
Question: What will be the output?

- A. Yes
- B. No
- C. Error
- D. No output

Correct Answer: **A. Yes**

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13. Logical NOT with Complex Condition

a = 9
b = 3
IF NOT (a < 10 AND b == 3) THEN
    PRINT "False Condition"
ELSE
    PRINT "True Condition"
END IF

Question: What will be printed?
- A. True Condition
- B. False Condition
- C. Error
- D. No output

Correct Answer: **A. True Condition**

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14. Combining AND, OR, and NOT

x = 10
y = 20
z = 15
IF NOT (x > y) AND (y > z OR x < z) THEN
    PRINT "Valid"
ELSE
    PRINT "Invalid"
END IF

Question: What will be the output?
- A. Valid
- B. Invalid
- C. Error
- D. No output

Correct Answer: **A. Valid**

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15. Short-Circuit AND with Logical Operator

x = 0
y = 4
z = 6
IF x != 0 AND y == 4 AND z > 2 THEN
    PRINT "Pass"
ELSE
    PRINT "Fail"
END IF

Question: What will be printed?

- A. Pass
- B. Fail
- C. Error
- D. No output

Correct Answer: **B. Fail**

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16. Using Multiple OR Operators

x = 8
y = 12
z = 3
IF x == 10 OR y == 12 OR z > 5 THEN
   PRINT "Condition True"
ELSE
   PRINT "Condition False"
END IF

Question: What will be printed?
- A. Condition True
- B. Condition False
- C. Error
- D. No output

Correct Answer: **A. Condition True**

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17. Logical XOR Equivalent (Exclusive OR)

a = True
b = False
IF (a OR b) AND NOT (a AND b) THEN
   PRINT "XOR True"
ELSE
   PRINT "XOR False"
END IF

Question: What will be the output?
- A. XOR True
- B. XOR False
- C. Error
- D. No output

Correct Answer: **A. XOR True**

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18. Short-Circuit OR with Functions

FUNCTION isPositive(x)
   RETURN x > 0
END FUNCTION
x = 0
y = -10
IF isPositive(x) OR isPositive(y) THEN
   PRINT "Positive Found"
ELSE
   PRINT "None Positive"

END IF
Question: What will be printed?
- A. Positive Found
- B. None Positive
- C. Error
- D. No output

Correct Answer: **B. None Positive**

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19. Complex Logical Operators

a = 5
b = 0
IF a > 0 AND b == 0 OR a == 5 THEN
    PRINT "Correct"
ELSE
    PRINT "Incorrect"
END IF
Question: What will be printed?
- A. Correct
- B. Incorrect
- C. Error
- D. No output

Correct Answer: **A. Correct**

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20. AND Operator with False Condition

x = 10
y = 0
IF x == 5 AND y == 10 THEN
    PRINT "Both True"
ELSE
    PRINT "One or Both False"
END IF
Question: What will be printed?
- A. Both True
- B. One or Both False
- C. Error
- D. No output

Correct Answer: **B. One or Both False**