

Topic Name: Operators

Student Name and ID: Sathvika Nellutla(07)

Mentor Name: Tejaswini Annaluri

Date of Submission: 08-01-2025

Aproved by: -----

Score: -----

Performance: -----

1. Which operator performs exponentiation in Python?

- A) **
- B) //
- C) %
- D) ^

Answer: A

2. If $x = 8$, what is the result of $x \% 3$?

- A) 2
- B) 1
- C) 3
- D) 0

Answer: A

3. What is the output of $3 ** 2 // 2$?

- A) 4.5
- B) 4
- C) 9
- D) 7

Answer: D

4. Which of the following has the highest precedence?

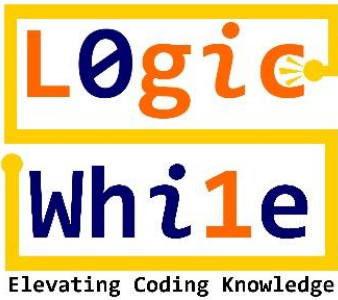
- A) +
- B) //
- C) **
- D) %

Answer: C

5. If $x = 5$, which of the following evaluates to True?

- A) $x != 5$
- B) $x <= 5$
- C) $x > 10$
- D) $x == 10$

Answer: B



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6. What does `10 > 5 and 5 != 5` evaluate to?

- A) True
- B) False
- C) None
- D) Error

Answer: B

7. What does `False or True and False` evaluate to?

- A) True
- B) False
- C) Error
- D) None

Answer: B

8. Given the pseudocode:

`X = 14 >> 2`

`Y = 7 << 1`

`Z = X ^ Y`

What is the value of Z?

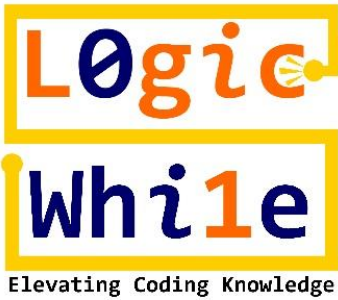
- A) 10
- B) 14
- C) 6
- D) 2

Answer: C

9. What does the `&` operator do?

- A) Logical AND
- B) Bitwise AND
- C) Logical OR
- D) Bitwise OR

Answer: B



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10. Which operator shifts bits to the right?

- A) <<
- B) >>
- C) ~
- D) ^

Answer: B

11. Which assignment operator is used to perform floor division?

- A) =
- B) //=
- C) /=
- D) %=

Answer: B

12. If x = 4, what does x **= 2 result in?

- A) 2
- B) 8
- C) 16
- D) Error

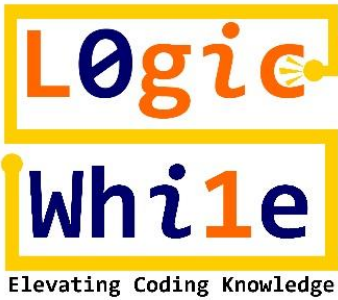
Answer: C

13. What is the output of the following expression?

((5 | 2) ^ (7 & 3)) << 2

- A) 16
- B) 24
- C) 28
- D) 32

Answer: C



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14. If $x = [1, 2]$ and $y = [1, 2]$, what does $x \text{ is } y$ return?

- A) True
- B) False
- C) Error
- D) None

Answer: B

15. Given the pseudocode:

A = 10

B = 3

C = A // B + A % B

value of C?

- A) 4
- B) 5
- C) 6
- D) 7

Answer: C

16. Consider the expression $4 ** 2 ** 3$. How is it evaluated based on associativity?

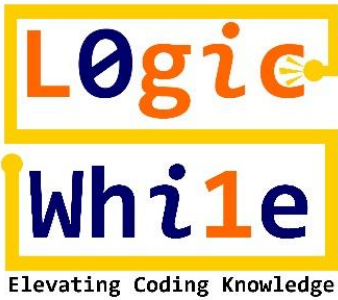
- A) $(4 ** 2) ** 3$ (left-to-right)
- B) $4 ** (2 ** 3)$ (right-to-left)
- C) $4 ** 2 * 3$ (arbitrary order)
- D) SyntaxError

Answer: B

17. What does $2 \text{ in } [1, 3, 5]$ evaluate to?

- A) True
- B) False
- C) Error
- D) None

Answer: B



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18. What does the following expression evaluate to?

$(9 \& 7) | (5 << 1) - (10 \% 3)$

- A) 14
- B) 12
- C) 10
- D) 8

Answer: A

19. Which of the following results in **True?**

- A) $(10 >> 1) == (5 \& 3)$
- B) $(8 | 2) < (12 \wedge 4)$
- C) $(14 \& 7) == (28 >> 2)$
- D) $(9 \wedge 3) != (7 << 1)$

Answer: D

20. Given the pseudocode:

A = 15

B = 7

C = (A | B) & ~(A & B)

What is the value of C?

- A) 8
- B) 10
- C) 14
- D) 6

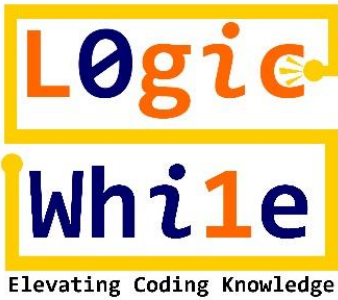
Answer: B

21. Evaluate the output of:

$(16 >> 2) + (9 | 1) - (5 \& 3)$

- A) 12
- B) 14
- C) 10
- D) 8

Answer: A



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22. For the assignment operator =, which of the following is the correct associativity rule?

- A) Left-to-right
- B) Right-to-left
- C) Neither
- D) Both

Answer: B

23. Given the pseudocode:

A = 15

B = 7

C = (A | B) & ~(A & B)

What is the value of C?

- A) 8
- B) 10
- C) 14
- D) 6

Answer: B

24. Which operator checks if two variables point to the same memory location?

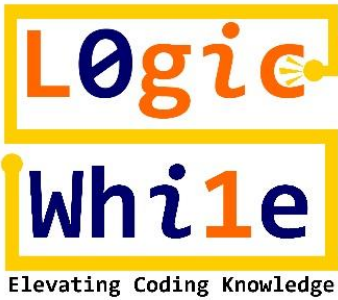
- A) is
- B) ==
- C) in
- D) =

Answer: A

25. What does 'apple' not in ['orange', 'banana'] evaluate to?

- A) True
- B) False
- C) Error
- D) None

Answer: A



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26. What is the result of the following expression?

$((8 // 3) ** 2) + (14 \% 5) - ((7 >> 1) \& 3)$

- A) 9
- B) 12
- C) 14
- D) 16

Answer: B

27. What is the output of $3 ** 2 // 2$?

- A) 4.5
- B) 4
- C) 9
- D) 7

Answer: D

28. Which Boolean operator has the highest precedence?

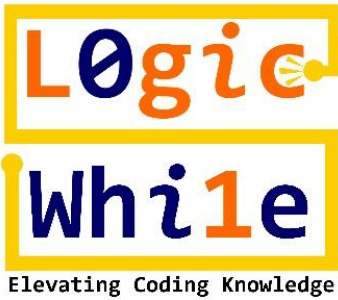
- A) $\&\&$ (AND)
- B) $\|\|$ (OR)
- C) $!$ (NOT)
- D) All have the same precedence

Answer: C

29. If $x = \text{true}$ and $y = \text{false}$, what is the result of the expression $x \&\& !y$?

- A) true
- B) false
- C) null
- D) undefined

Answer: A



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30. Evaluate the expression:

$(12 \gg 2) \& (9 \mid 3) \wedge (15 \% 4)$

A) 1

B) 3

C) 5

D) 7

Answer: B

31. Which of the following evaluates to 0?

A) $(15 \& 7) \wedge (8 \mid 3)$

B) $(14 \gg 3) \& (3 \ll 1)$

C) $(12 \wedge 12) \mid (4 \% 2)$

D) $(7 \gg 2) \& (15 \% 4)$

Answer: C

32. Consider the pseudocode:

$A = 8 \mid 3$

$B = A \& 7$

$C = B \wedge 2$

What is the value of C?

A) 2

B) 6

C) 4

D) 5

Answer: D

33. In the expression $2 ** 3 ** 2$ (exponentiation operator $$), which associativity rule applies?**

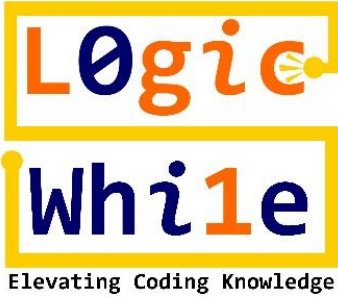
A) Left-to-right

B) Right-to-left

C) Neither

D) Both

Answer: B



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34. Which of the following Boolean expressions is always true?

- A) true || false
- B) true && false
- C) false && false
- D) false || false

Answer: A

35. What is the output of the Boolean expression false && (true || false)?

- A) true
- B) false
- C) null
- D) undefined

Answer: B