

## 13) Top Company Interview Questions – Operators

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Disclaimer: When compiling related questions from each lesson, note that not all of them will have answers explicitly mentioned in the material. For such questions, you are encouraged to use ChatGPT and other credible references to find and understand the answers.

1. Explain operator precedence and associativity for arithmetic operators; what is the value of  $10 - 2 * 3 ** 2$  in Python and in C/Java? (TCS, 2024)
  2. What are the outputs of  $10/3$ ,  $10//3$ ,  $10\%3$ ? (Infosys, 2023)
  3. Why does Python return 2.0 for  $10 / 5$  while C/Java with int operands returns 2 for  $10/5$ ? (Wipro, 2025)
  4. What is the difference between  $**$  (exponent) and  $^$  (bitwise XOR) across languages? Compute  $3^2$  and  $3 \text{ XOR } 2$  and explain pitfalls. (Accenture, 2024)
  5. Compute bitwise  $a \& b$ ,  $a | b$ ,  $a ^ b$  for  $a=10$  ( $1010_2$ ) and  $b=5$  ( $0101_2$ ); give typical use cases. (IBM, 2024)
  6. Why is  $\sim 10 == -11$  under two's complement? Explain bitwise NOT semantics. (Qualcomm, 2022)
  7. Explain shifts: why does  $a \ll 1$  roughly double and  $a \gg 1$  roughly halve for integers? Any caveats with signed right shift? (Intel, 2025)
  8. In C/Java, what bug occurs if  $=$  is used instead of  $==$  in a condition, and how can you prevent it? (Flipkart, 2023)
  9. Swap two numbers without using a temporary variable or arithmetic operators (Infosys, TCS)
  10. Reverse bits of a 32-bit integer using bitwise operators only. (Infosys)
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