1. Which of the following is NOT a bitwise operator in C?

A. &
B. |
C. &&
D. ^

Ans: C. &&

Explanation:

&& is a logical AND operator, not a bitwise operator.

2. Which of these operators performs bitwise AND?

A. |
B. &&
C. &
D. ^

Ans: C. &

3. What does the | operator do?

A. Bitwise AND
B. Bitwise OR
C. Bitwise XOR
D. Bitwise NOT

Ans. B. Bitwise OR.

Explanation.

it sets each bit to 1 if any of the bits is 1.

4. What is the result of 5 & 3?

A. 1
B. 2
C. 3
D. 5

Ans A. 1

Explanation

5 → 0101, 3 → 0011, AND → 0001 = 1.

5. What is the result of 5 | 3?

A. 7
B. 2
C. 1
D. 8

Ans : A. 7

Explanation:

5 → 0101, 3 → 0011, OR → 0111 = 7

6. What is the result of 5 ^ 3?

A. 2
B. 6
C. 7
D. 4

Ans: B. 6.

Explanation

5 → 0101, 3 → 0011, XOR → 0110 = 6

7. What does the ~ operator do?

A. Shifts bits
B. Flips bits
C. ANDs bits
D. Adds 1 to bits

Ans: B. Flips bits

Explanation:

It inverts all bits (bitwise Complement)

8. What is the result of ~5 in C (Assuming 32-bit int)?

A. 4
B. -5
C. -6
D. undefined

Ans: C. -6

Explanation.

-X = -(X+1) → ~5 = -(5+1) = -6.

9. What does the left shift operator (<<)

A. Divides by 2
B. multiplies by 2
C. Rotates bits
D. Inverts bits

Ans: B. multiplies by 2

Explanation:

a << n shifts bits left by n, equivalent of multiplying by 2^n.

10. What does the right shift operator (>>) do

A. Divides by 2

B. multiplies by 2

C. Adds bits

D. Subtracts bits

Ans. A. Divides by 2

Explanation.

a >> n divides the number by 2^n

11. What is the result of 8 >> 2 ?

A. 1

B. 2

C. 4

D. 8

Ans : B. 2

Explanation.

$8 \div 2^2 = 2$.

12. What is the result of 3 << 2 ?

A. 6

B. 12

C. 5

D. 16

Ans B. 12

Explanation

$3 \times 2^2 = 12$

13. which operator has the highest precedence among bitwise operators ?

A. &
B. |
C. ^
D. ~

Ans : D. ~

Explanation :
~ is unary and has higher precedence than binary bitwise operators.

14. What is the result of the following code ?

```
int a = 7, b = 4;
printf("%d", a & b);
```

A. 4
B. 3
C. 0
D. 2

Ans : D. 4

Explanation :

7 → 0111, 4 → 0100, AND → 0100 = 4

15. Bitwise operators can be used on which data types ?

A. float only
B. int and char types
C. double only
D. All data types

Ans. B. int and char types

Explanation :-

Bitwise operators work on integral data types (integer, char, short, long, unsigned).