

1. What is the output of the expression (5 << 1)?

- a) 10
- b) 2
- c) 20
- d) 5

Answer: a) 10

Explanation: Left shift (<<) multiplies by 2^n . So, $5 \ll 1 = 5 \times 2^1 = 10$.

2. What does the expression (16 >> 2) evaluate to?

- a) 8
- b) 4
- c) 2
- d) 1

Answer: b) 4

Explanation: Right shift (>>) divides by 2^n . So, $16 \gg 2 = 16 / 2^2 = 4$.

3. If `int a = 7; a = a << 2;`, what is the value of a?

- a) 14
- b) 28
- c) 3
- d) 21

Answer: b) 28

Explanation: $7 \ll 2 = 7 \times 2^2 = 28$.

4. Which of the following is equivalent to `a++`?

- a) `a = a + 1`
- b) `++a`
- c) `a + 1`
- d) `a = +1`

Answer: a) `a = a + 1`

Explanation: Both `a++` and `a = a + 1` increment a by 1 (but timing of increment differs).

5. What will be the output of the code?

```
int a = 5;
printf("%d", a++);
```

- a) 6
- b) 5
- c) Error
- d) Undefined

Answer: b) 5

Explanation: Post-increment prints the old value first, then increments.

6. What will be the output?

```
int a = 5;  
printf("%d", ++a);
```

- a) 4
- b) 5
- c) 6
- d) Error

Answer: c) 6

Explanation: Pre-increment increments first, then prints.

7. What is the output of:

```
int a = 8;  
printf("%d", a >> 1);
```

- a) 16
- b) 4
- c) 2
- d) 1

Answer: b) 4

Explanation: Right shift divides by 2: $8 \gg 1 = 8 / 2 = 4$.

8. What happens when you perform $(1 \ll 3)$?

- a) 1
- b) 2
- c) 3
- d) 8

Answer: d) 8

Explanation: $1 \times 2^3 = 8$.

9. If `int a = 10; printf("%d", a--);` then a becomes:

- a) 10
- b) 11
- c) 9
- d) 8

Answer: c) 9

Explanation: Post-decrement prints old value (10), then reduces to 9.

10. What will be the value of b after this code?

```
int b = 4;  
b = b >> 2;
```

- a) 4
- b) 2
- c) 1
- d) 0

Answer: c) 1

Explanation: $4 \gg 2 = 4 / 2^2 = 1$.

[11/2, 9:02 PM] ❤️...O2: 11. What is the result of `(3 << 3)`?

- a) 6
- b) 9
- c) 24
- d) 12

Answer: c) 24

Explanation: Left shift multiplies by $2^3 \Rightarrow 3 \times 8 = 24$.

12. Which of the following statements about shift operators is TRUE?

- a) Left shift divides the number by 2
- b) Right shift multiplies the number by 2
- c) Left shift multiplies by powers of 2
- d) Right shift has higher precedence than multiplication

Answer: c) Left shift multiplies by powers of 2

13. What will be printed?

```
int x = 10;  
printf("%d", --x);
```

- a) 9
- b) 10
- c) 11
- d) Error

Answer: a) 9

Explanation: Pre-decrement decreases first, then prints.

14. Evaluate the expression:

```
int a = 2, b;  
b = ++a + a++;
```

- a) 5
- b) 6
- c) 7
- d) 8

Answer: c) 7

Explanation:

Initially a = 2

$++a \rightarrow 3, a = 3$

$a++ \rightarrow$ use 3, then $a = 4$

So $b = 3 + 3 = 6$ (Wait correction needed)

Let's compute carefully

Correct step-by-step:

$++a \rightarrow$ a becomes 3, value = 3

$a++ \rightarrow$ value = 3, then $a = 4$

So $b = 3 + 3 = 6$

Answer: b) 6

15. What is the output?

```
int x = 5;  
x = x >> 1;
```

```
printf("%d", x);
```

- a) 10
- b) 2
- c) 4
- d) 1

Answer: b) 2

Explanation: Right shift divides by 2 $\Rightarrow 5 \gg 1 = 2$.