1. what will be the output of the following code?

```
int x = 5;
printf("%d", x<<1);
```

A. 5

B. 10

C. 2

D. 15

Answer: B

Explonation: 5 in binary:
0101
left shift by 1 → 1010
which is 10 in decimal

2. what is the result of 8<<2?

A. 16

B. 32

C. 4

d. 8

Answer: B

Explonation: $8 * 2^2 = 8 * 4 = 32$

3 if int a = 10; int b = a << 2; what is the value of b?

A. 20

B. 40

C. 30

D. 50

Answer: B

Explanation: a<<2
$= 10 * 2^2 = 40.$

Hence

3. what will be the output of the following code

```
#include<stdio.h>
  void main() {
  int x=0;
  if(x=0)
  printf("its zero\n");
  else
  printf("its not zero\n");
    }
```

a. its not zero
b. its zero
c. Run time error
D. None

Answer: its not zero

4. what is the result of 8>>2?

A. 2
B. 4
C. 6
D. 1

right shift by 2 divides the number by $2^2 \rightarrow 8 \div 4 = 2$

5. what does the right shift (>>) operator do?

A. multiplies the number by 2
B. Divides the number by 2
C. Adds two numbers
D. Inverts Bits

B. Divides the number by 2

Explanation: Right shifting by one divides an integer by 2

6 what is the output of the following

Int a = 2;
printf("%d", a<<4);

A. 4
B. 8
C. 16
D. 32

D. 32
Explanation: $2 \times 2^4 = 32$

7 if int a = 64; printf("%d", a >>3); what is printed?

A. 8
B. 16
C. 32
D. 4

Answer: 8
Explanation:
64 ÷ 8 = 8 (because $2^3 = 8$)

8. The right shift operator moves bits toward the:

A. Left side
B. right side
C. Center
D. None

Answer: B. right side

9. in C, for unsigned integers, right shift fills with:

A. 1s
B. 0s
C. Random bits
D. Sign bits

B. 0s
Explanation:
unsigned right shift always inserts zeros from the left

10. what is 20>>1 equal to?

A. 5

B. 10

C. 15

D. 8

Answer: B:10

Explonation:

$20 \div 2^1 = 10$

11. what is the output of the following code

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

A. 4

B. 5

C. 6

D. 7

C. 6

Explonation:

a++ increases a from 5 to 6

12. which of the following is post-increment?

A ++a

B. a--

C. --a

D a--

B. a++

Explonation: post-increment increases the value after the expression is evaluated.

13. what is the output of the following code?

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

A. 5

B. 4

C. 6

D. 3

A: 5

Explanation:

a-- prints 5 first, then decreases to 4.

14. what will be printed:

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

A. 6 12

B. 7 12

C. 7 13

D. 6 11

B. 7 12

Explanation:

++a makes a = 6, uses 6

a++ uses 6, then a becomes 7

So, b = 6 + 6 = 12, a = 7.

15. what is the output?

```
Int a = 3;
Int b = a++ + ++a;
printf ("%d %d", a, b);
```

A. 37

B. 47

C. 58

D. 46

Answer: B. 57

Explanation:

a++ uses 3 (then a = 4), ++a makes a = 5, uses 5

total 3 + 4 = 7.