

21/1/2025

i) Read two integer values perform bitwise operations.

$$a=4, b=2$$

412

402

4^2

~4 is

$\Rightarrow \text{#include <stdio.h>}$

int main()

{

int a, b;

printf("Enter two integer values : ");

scanf("%d %d", &a, &b);

printf("\n(a&b) = %d", a&b);

printf("\n(a|b) = %d", a|b);

printf("\n(a^b) = %d", a^b);

printf("\n(~a) = %d", ~a);

printf("\n(~b) = %d", ~b);

return 0;

}

Output

Enter two integer values : 4, 2

And (a&b) = 0

OR (a|b) = 11441108

XOR (a^b) = 11441108

NOT (~a) = -5

NOT (~b) = -11441105

a=4, b=2

a < 2

a > 2

a <= 2

a >= 2

a != 2

$\Rightarrow \text{\#include <stdio.h>}$

int main()

{

int a, b;

printf("Enter two integer values: ");

scanf("%d %d", &a, &b);

printf("\nResults of relational operations:\n");

printf("a < b : %d\n", a < b);

printf("a > b : %d\n", a > b);

printf("a <= b : %d\n", a <= b);

printf("a >= b : %d\n", a >= b);

printf("a != b : %d\n", a != b);

return 0;

}

Output :-

Enter two integer values: 4, 2

Results of relational operations:

a < b : 0

a > b : 1

a <= b : 0

a >= b : 1

a != b : 1

MCQ → increment, decrement,
shift operator.

1) What will be the output of the following C code?

```
#include <stdio.h>
int main()
{
    int i=0;
    int x=i++, y=++i;
    printf ("%d %d\n", x, y);
    return 0;
}
```

a) 0, 2

b) 0, 1

c) 1, 2

d) undefined

⇒ $i++ \rightarrow$ post increment

$i=0+1$

$x=1$

$+i \rightarrow$ pre increment

$i=0$

$y=2$

2) What will be the output of the following code?

```
#include <stdio.h>
```

```
int main()
```

```
{
```

```
int i=10;
```

```
int *p=&i;
```

```
printf ("%d\n", *p++);
```

y

a) 10

b) 11

c) Garbage value

d) Address of p

3) what will be the output of the following code?

```
#include <stdio.h>
```

```
void main()
```

```
{
```

```
int x=97;
```

```
int y=sizeof(x++);
```

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

a) ~~x is 97~~ b) x is 98 c) x is 99

d) Run time error

$\Rightarrow x++$ no effect

4) what will be the output of the following C code

```
#include <stdio.h>
```

```
void main()
```

```
{
```

```
int x=4, y, z;
```

```
y=-x;
```

```
z=x--;
```

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

```
}
```

a) 3 2 3 b) 2 3 3 c) 3 2 2 d) 2 3 4

$x=4$.

-x (pre-decrement decreases) -

x- (post decrement decreases)

2, 3, 1

5) #include <stdio.h>

```
void main()
```

```
{
```

```
int x=4;
```

```
int *p=&x;
```

```
int *k=p++;
```

```
int r=p-k;
```

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

```
}
```

a) 4 b) 8 ~~c) 1~~ d) Run time error

9) #include <stdio.h>

int main()

{

if (7 & 8)

printf ("Honesty ");

if ((n7 & 0x000f)==8)

printf ("is the best policy\n");

}

a) Honesty is the best policy

b) Honesty is the best policy

c) NO output

d) Honesty is the best policy

10) #include <stdio.h>

int main()

{

int a=2;

if (a>>1)

printf ("%d\n", a);

}

a) 0 b) 1 c) 2 d) NO output

x>>y is right shift operator

a>>1, 2>>1 gives 1 (non zero value)

11) #include <stdio.h>

int main()

{

int i, n, a=4;

scanf ("%d", &n);

for (i=0; i<n; i++)

a=a*2;

i

a) logical shift left b) logical shift right

c) Arithmetic shift right

d) Bitwise exclusive OR

12) `#include <stdio.h>`

int main()

{

 unsigned int a = 10;

 a = ~a;

 printf("%d\n", a);

}

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

$$\Rightarrow \text{~a} = -(a+1) = -11$$

13) `#include <stdio.h>`

int main()

{

 int x = 2;

 x = x << 1;

 printf("%d\n", x);

}

- ~~a) 4~~ b) i) Depend on the compiler d) depends on the
 endianess of the machine

14) `#include <stdio.h>`

int main()

{

 int x = -2;

 x = x >> 1;

 printf("%d\n", x);

}

- ~~a) 1~~ b) -1 c) $2^{31}-1$ considering into be 4 bytes
 d) either -1 or 1

15) `#include <stdio.h>`

int main()

{

 if (no == 1)

 printf("yes\n");

 else

 printf("no\n");

}

- a) yes ~~b) no~~ d) compile time error d) undefined.

19) #include <stdio.h>

void main()

{

int k=8;

int x=0 == 1&& k++;

printf ("%d\n", k);

}

- a) 0 b) 0.8 c) 18 d) 19

$\Rightarrow 0 = 1 \& \& k++$

20) #include <stdio.h>

void main()

{

char a = 'a';

int x = (a % 10) ++;

printf ("%d\n", x);

}

- a) 6 b) junk value c) compile time error d) 7

1) #include <stdio.h>

void main()

{

1<2 ? return 1 : return 2;

y

- a) returns 1 b) returns 2 c) varies d) compile time error

2) #include <stdio.h>

void main()

{

unsigned int x=-5;

printf ("%d\n", x);

y

- a) run time error b) Arises $\sqrt{-5}$ d) 5

3) #include <stdio.h>

int main()

{

int x=2, y=2;

x/=x/y;

printf ("%d\n", x);

return 0;

y

- a) 2 b) 1 c) 0.5 d) undefined behaviour

29)

24) `#include <stdio.h>`
`int main()`
`{`
`int x=1, y=0;`
`x&y = y;`

`Point f("%d\n", x);`
`y`
~~a) compile time error b) 0 c) 0 d) undefined behaviour~~

25) what will be the value of the following expression
~~"(x=foo()) != 1 considering foo() returns 2"~~

- a) 2 b) true ~~c) 1~~ d) 0

26) operation "a=a*b+a" can also be written as
~~a*=b+1; b) (c=a*b, a=c+a)!=a; c) a=(b+1)*~~
~~d) All of the mentioned.~~

27) what will be the final value of c in the following C statement? (Initial value of c = 2)

`c<<=1;`

- a) c=1; b) c=2. ~~c) c=3~~ d) c=4

28) `#include <stdio.h>`

`int main()`

`{`

`int a=1, b=2`

`a+=b -=a;`

`printf ("%d %d", a,b);`

`y`

- a) 11 b) 12 ~~c) 21~~ d) 22

$$\Rightarrow b -= a \Rightarrow b - 1 = 1$$

$$a += (b) \Rightarrow a + 1 = 2$$

3) $a=4, b=2$
 $a==2$

$\Rightarrow \#include < stdio.h \rightarrow$

int main()

{

int a,b;

printf("Enter two integer values: "));

scanf("%d %d", &a, &b);

If (a == b) {

printf("Both numbers are equal.\n");

else {

printf("Both numbers are not equal.\n");

return 0;

}

Output:

Enter two integer values: 4, 2
Both numbers are not equal.

6) #include <stdio.h>

void main()

{ int a=5, b=-7, c=0, d;
d=++a && ++b || ++c;

printf("%n%d.%d%d", a, b, c, d);

}

a) 6, -600 b) 6-501 c) -6-601 ✓ 6-601

$$++a = 5+1 = 6$$

$$++b = -7+1 = -6$$

$$++c = 0 \quad \text{true}$$

$$d) \quad ++a \& \& ++b \rightarrow \text{true} - 1$$

7) #include <stdio.h>

void main()

{

int a=-5;

int k=(a++, ++a);

printf("%d\n", k);

y

a) -4 b) -5 c) 4 ✓ d) -3

$$\begin{array}{l|l} a++ = -5 & ++a = \\ = -4 & \end{array}$$

8) #include <stdio.h>

int main()

{

int c=2^3;

printf("%d\n", c);

y

a) 1 b) 8 c) 9 d) 0

$$2^3 = 0010$$

$$0\ 0 = 0 \quad 3 = 0011$$

$$1\ 1 = 0$$

$$1\ 0 = 1$$

$$0\ 1 = 1$$

16) #include <stdio.h>
int main()
{
 int y=0;
 if (1 || y==1)
 printf("y is %d\n", y);
 else
 printf("%d\n", y);
}

- ~~a~~y is 1 b) 1 c) run time error d) undefined
1 || 1 = 1 || (y=1)

17) #include <stdio.h>

```
int main()  
{  
    int y=1;  
    if (y& (y=2))  
        printf("true %d\n", y);  
    else  
        printf("false %d\n", y);  
}
```

- ~~a~~true 2 b) false 2 c) either true or false 2 d) true
y & (y=2)
1 & 2 = 0.

18) #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

29) `#include <stdio.h>`
`int main()`
`{`
`int a=4, n, i, result=0;`
`scanf("%d", &n);`
`for (i=0 ; i<n ; i++)`
`result+=a;`
`}`

- a) Addition of a and n b) Subtraction of a and n
c) Multiplication of a and n d) Division of a and n

30) Which of the following is an invalid assignment operator?

- a) `a%10 = 10;` b) `a/1 = 10;` c) `a1 = 10;` d) None of mentioned