

PRECEDENCE AND ASSOCIATIVITY

OPERATORS	ASSOCIATIVITY
() [] -> .	Left to right
! ++ -- + - * & (type)	Right to left (Unary)
* / %	Left to right
+ -	Left to right
< <= > >=	Left to right
== !=	Left to right
&&	Left to right
 	Left to right
?:	Right to left
= += -= *= /= %=	Right to left
,	Left to right

1. What is the output of the following C program?

```
#include <stdio.h>
main()
{   int x = 5;
    if (x = 0)
        printf("Zero\n");
    else
        printf("Not Zero\n");
}
```

- a) Zero
- b) Not Zero
- c) Compiler Error
- d) Undefined Behavior

2. What is the output of the following C program?

```
#include <stdio.h>
main() {
    int a = 3, b = 5;
    (a > b) ? printf("Red\n") : (a == 3) ? printf("Green\n") : printf("Blue\n");
}
```

- a) 3
- b) Red
- c) Green
- d) Blue

3. Consider the following C program and find the output.

```
#include <stdio.h>
main() {
    int x = 1;
    switch (x + 1) {
        case 1: printf("10 "); break;
        case 2: printf("20 "); break;
        case 3: printf("30 ");
        default: printf("40 ");
    }
}
```

- a) 20
- b) 20 30
- c) 20 30 40
- d) 10

4. What will be printed by the following C program?

```
#include <stdio.h>
int main() {
    int arr[6] = {1, 2, 3, 4, 5, 6};
    int count = 0;
    for (int i = 0; i < 6; i++) {
        if (arr[i] % 2 == 0)
            count++;
    }
    printf("%d", count);
    return 0;
}
```

- a) 2
- b) 5
- c) 4
- d) 3

5. What is the output of the following C program?

```
#include <stdio.h>
main() {
    int i = 0;
    while (i < 5) {
        if (i == 2) break;
        printf("%d ", i++);
    }
}
```

- a) 0 1 2 3 4
- b) 0 1 2
- c) 0 1
- d) Infinite loop

6. What will be printed by the following C code fragment?

```
for (int i = 0; i < 5; i++) {
    if (i == 2)
        continue;
    printf("%d ", i);
}
```

- a) 0 1 3 4
- b) 0 1 2 3 4
- c) 0 1 3 4 5
- d) 1 2 3 4

7. What is the output of the following C program?

```
#include <stdio.h>
int fun(int arr[2][3], int t) {
    for (int i = 0; i < 2; i++) {
        for (int j = 0; j < 3; j++) {
            if (arr[i][j] == t) {
                return 1;
            }
        }
    }
    return 0;
}
int main() {
    int arr[2][3] = {{1, 2, 3}, {4, 5, 6}};
    printf("%d", fun(arr, 4));
    return 0;
}
```

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

8. What is the output of the following C program?

```
#include <stdio.h>
int calc(int arr[2][2], int row) {
    int sum = 0;
    for (int i = 0; i < 2; i++) {
        sum += arr[row][i];
    }
    return sum;
}
int main() {
    int arr[2][2] = {{1, 2}, {3, 4}};
    printf("%d", calc(arr, 1));
}
```

- a) 4
- b) 3
- c) 10
- d) 7

9. What will be printed by the following C program?

```
#include <stdio.h>
int func(int arr[], int size) {
    int count = 0;
    for (int i = 0; i < size; i++) {
        if (arr[i] < 0) {
            count++;
        }
    }
    return count;
}
int main() {
    int arr[] = {-5, -10, 15, -20, 25};
    printf("%d", func(arr, 5));
}
```

- a) 2
- b) 3
- c) 4
- d) 1

10. What will be the output of the following C code fragment?

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

- a) 22
- b) 21
- c) 20
- d) Undefined behavior

11. In C, the main function returns a status code. Which of the following values indicates normal program termination?

- a) -1
- b) 1
- c) 0
- d) none of the above

12. Which of the following is/are correct way of using commenting in C language?

<pre> i) #include <stdio.h> int main() { // This program finds and prints the sum of two integers int a=3, b=4, sum; printf("sum=%d", a+b); return 0;} </pre>	<pre> ii) #include <stdio.h> int main() { // This program finds and prints the sum of two integers int a=3, b=4, sum; printf("sum=%d", a+b); return 0; } </pre>
<pre> iii) #include <stdio.h> int main() { /*This program finds and prints the sum of two integers */ int a=3, b=4, sum; printf("sum=%d", a+b); return 0;} </pre>	<pre> iv) #include <stdio.h> int main() { /*This program finds and prints the sum of two integers int a=3, b=4, sum; printf("sum=%d", a+b); return 0; */} </pre>

- a) i) and ii) only
- b) b) ii) and iii) only
- c) c) iii) and iv) only
- d) d) i) and ii) and iii) only

13. The predefined function scanf() is defined in _____ .

- a) math.h
- b) stdlib.h
- c) stdio.h
- d) string.h

14. Which keyword is used to prevent any changes in the variable within a C program?

- a) define
- b) include
- c) main
- d) const

15. Which of the following is not a basic data type in C?

- a) unsigned float
- b) double
- c) unsigned long int
- d) long double

16. What is the result of a logical or a relational expression in C?

- a) True or False
- b) 0 or 1
- c) 0 if an expression is false and any positive number if an expression is true
- d) any positive number if an expression is true and any negative number if the expression is false

17. Which of the following is not an operator in C?

- a) ,
- b) sizeof()
- c) []
- d) ;

18. What will be the output of the following C code?

```
#include <stdio.h>
int main()
{
    int y = 10;
    int y = 20;
    printf("Hello %d %d\n", y,y);
    return 0;
}
```

- a) Compile time error
- b) Hello 10
- c) Hello 20
- d) Hello 10 20

19. What is the difference between the following 2 C codes?

```
#include <stdio.h> //Program 1
int main()
{
    int d, a = 0, b = 1;
    d = a++ + ++b;
    printf("%d %d %d", d, a, b);
}
```

```
#include <stdio.h> //Program 2
int main()
{
    int d, a = 0, b = 1;
    d = a++ +++b;
    printf("%d %d %d", d, a, b);
}
```

- a) No difference
- b) Values of a, b, d are different
- c) Program 1 gives syntax error, program 2 does not
- d) Program 2 gives syntax error, program 1 does not

20. What is the output of the following C program?

```
#include <stdio.h>

int main() {
    float x;
    int i=2, j=3;
    x=(float)i/j;
    printf("%6.2f",x);
    return 0;
}
```

(note: * denotes 1 space character)

- a) 0.67
- b) 0.67**
- c) **0.67
- d) 0.67*****

21. Which of the following correctly replaces the nested if code below:

```
if (num==1 || num==-1)
    val_cnt++;
else
    nonval_cnt++;
```

i) switch(num) { case 1:case-1: val_cnt++; default: nonval_cnt++; }	ii) switch(num) { case 1:case-1: val_cnt++; break; default: nonval_cnt++; }
iii) switch(num) { default: nonval_cnt++;break; case 1:case-1: val_cnt++; }	iv) num==1 num==-1 ? val_cnt++ : nonval_cnt++;

- a) i) and ii) only
- b) ii) and iii) only
- c) ii) and iv) only
- d) ii), iii) and iv) only

22. What is the output of the following program?

```
#include <stdio.h>

int main()
{
    int g=10;
    int m=4.5;
    float Force=m*g;
    printf("Force=%d", m*g);
    return 0;
}
```

- a) Force=45
- b) Force=40
- c) Force=40.0
- d) Force=45.0

23. Which of the following is a conditional expression that checks if a number x is within a range of values x1 and x2 (both inclusive and assume $x_2 > x_1$)

- a) $x_1 < x < x_2$
- b) $x_1 \leq x \leq x_2$
- c) $x \geq x_1 \ \&\& \ x \leq x_2$
- d) $x \leq x_2 \ || \ x \geq x_1$

24. Which of the following codes create an infinite loop?

i) for (; ;) {sum++;}	ii) while (-100) {sum++;}
iii) for(int i=0;i<10;) {sum++;}	iv) do { sum++;} while(1);

- a) ii) only
- b) i) and ii) only
- c) i) and iii) only
- d) all of them

25. What is the output of the following program?

```
#include <stdio.h>

int main() {
    int i,sum=0;
    for (i=0;i<=3;i++);
        sum++;
    printf("%d",sum);
    return 0;}
}
```

- a) 1
- b) 0
- c) 4
- d) 6

26. What is the output of the following program?

```
#include <stdio.h>

int main()
{
    printf("%d",sizeof(char));
    return 0;
}
```

- a) it depends on the computer used
- b) 0
- c) 1
- d) 8

27. Given that the output of Program1 below is 65; what is the output of Program2?

<pre>// Program1 #include <stdio.h> int main() { char ch; int sum=0; for (ch='A';ch<='A';ch++) sum+=ch; printf("%d",sum); return 0; }</pre>	<pre>// Program2 #include <stdio.h> int main() { char ch; int sum=0; for (ch='A';ch<='C';ch++) sum+=ch; printf("%d",sum); return 0; }</pre>
---	---

- a) 0
- b) 198
- c) 65
- d) The program generates an error since ch is of type char

28. What does the following program do?

```
#include <stdio.h>

int main() {
    int arr[ 3 ][ 3 ]={1,2,3,4,5,6,7,8,9};
    int i,j;
    int sum=0;
    for (i=0;i<3;i++)
        for (j=0;j<3;j++)
            if (i==j)
                sum+=arr[ i ][ j ];
    printf("%d",sum);
    return 0;
}
```

- a) It finds the sum of values in a 2-dimensional integer array
- b) It finds the sum of values in a 1-dimensional integer array
- c) It finds the sum of values in a 2-dimensional integer array if the row number of the element is equal to its column number
- d) It assigns a new value to the element of a 2-dimensional array if the row number of the element is equal to its column number

29. Which of the following correctly initializes a 2-dimensional integer array, arr[3][3], such that its first 2 rows contain non-zero values and the third contains all zeros?

i) int arr[3][3]={{1,2,3},{4,5,6}};	ii) int arr[3][3]={1,2,3,4,5,6,7,8,9};
iii) int arr[3][3]={1,2,3,4,5,6};	iv) int arr[3][3]={{1,2,3},{4,5,6},{0,0,0}};

- a) ii) only
- b) i) and iii) and iv) only
- c) iii) and iv) only
- d) i) and iii) only

Consider the following program for Questions 30 and 31. The program has 2 missing lines. The program accepts two integers and uses a function named `find_max` to find the larger value. The larger value is printed in the main function.

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

missing line 1

```
int main() {  
  
int x,y, largest;  
printf("enter 2 integerst \n");  
scanf("%d%d",&x,&y);
```

missing line2

```
printf("largest=%d",largest);  
return 0;  
}  
  
int find_max(int a,int b)  
{  
if (a>b)  
return a;  
else return b;  
}
```

30. Which of the following should replace missing line 1 such that the function is correctly declared (function prototype)?

- a) `int find_max(int c, int d);`
- b) `find_max(int a, int b);`
- c) `find_max(x,y);`
- d) `int find_max(int a,int b)`

31. Which of the following should replace missing line 2 such that the function is correctly called?

- a) `largest=find_max(int x, int y);`
- b) `largest=find_max(x, y);`
- c) `find_max(x,y);`
- d) `find_max(int a,int b)`

32) Which of the following is the correct function definition header for a function named `arr` which uses two arguments, one integer and one float and doesn't return anything?

- a) `int arr(int, float);`
- b) `int arr(int, float)`
- c) `void arr(float,int)`
- d) `float arr(int);`

33. What is the output of the following program?

```
#include <stdio.h>

void f(int arr[ ], int m, int k)
{
    k++;
    arr[m-1]=-1;
    return;
}

int main() {
    int arr[3]={0};
    float k=0.0;
    f(arr,3,k);
    printf("%d %.1f",arr[2],k);

    return 0;
}
```

- a) 0 0.0
- b) -1 0
- c) -1 1.0
- d) -1 0.0

34. Given the code;

```
if (!(x1-x2))
if (x2 >= x3-x1)
    Result = x1 + (x1>=x3);
else
    Result = x1-x2 && x3;
else
    Result = x2 - x3 == x2;
```

Which one of the following statements is false?

- a) For $x1 == 1$, $x2 == 1$, $x3 == 3$, Result is 0
- b) For $x1 == 0$, $x2 == 0$, $x3 == 3$, Result is 1
- c) For $x1 == 1$, $x2 == 1$, $x3 == 0$, Result is 2
- d) For $x1 == 1$, $x2 == 0$, $x3 == 1$, Result is 0

35. Given the code

```
int main()
{
    void fun(int);
    int x=5;
    fun(x); //LineA
    printf("%d ", x); //LineB
}
```

```
void fun(int x)
{
    x += 7;
    printf("%d\n", x);
}
```

Which one of the following statements is false?

- a) The function fun has only one argument
- b) The output is **12 5**
- c) The interchange of LineA with LineB results in the interchange of the printed values
- d) Since the parameter is not given an initial value, the output is unpredictable

ANSWERS

1 b

2 c

3 a

4 d

5 c

6 a

7 b

8 d

9 b

10 a

11 c

12 b

13 c

14 d

15 a

16. b

17 d

18 a

19 d

20 c

21 d

22 b

23 c

24 d

25 a

26 c

27 b

28 c

29 b

30 a

31 b

32 c

33 d

34 b

35 d