1. **Predict the output of the following program.**

```c
#include <stdio.h>
#include <math.h>
int main()
{
    char ch1 = 'Z';
    char ch2 = 'a';
    int output = abs(ch1 - ch2);
    printf("%d", output);
}
```

- ○ -7
- ○ 32
- ○ -32
- ● 7

2. **Pair the following correctly.**

1	Arithmetic Operators		A	=, +=, -=, *=, /=, %=
2	Relational Operators		B	&&, ||, !
3	Assignment Operators		C	>, >=, <, <=, !=, ==
4	Logical Operators		D	+, -, *, /, %

- ○ 1-A, 2-B, 3-C, 4-D
- ○ 1-D, 2-C, 3-B, 4-A
- ○ 1-D, 2-B, 3-C, 4-A
- ● 1-D, 2-C, 3-A, 4-B

3. **In which of the following header files does the lower and upper bound values of integer family present?**

- ○ stdio.h
- ○ string.h
- ○ math.h
- ● limits.h

4. **What is the purpose of the `sizeof` operator in C?**

- ● Returns the size of a variable
- ○ Returns the address of a variable
- ○ Returns the value of a variable
- ○ Returns the type of a variable

5. Which of the following is the correct syntax for the ternary conditional operator in C?

- ◉ ? :
- ○ ??
- ○ if then else
- ○ switch

6. Match the following correctly

C Data Types Format Specifiers

1. int   a. %f
2. char   b. %d
3. float   c. %c
4. double   d. %lf
5. long int   e. %ld

- ○ 1-b, 2-c, 3-a, 4-e, 5-d
- ○ 1-a, 2-c, 3-b, 4-d, 5-e
- ○ 1-b, 2-c, 3-d, 4-a, 5-e
- ◉ 1-b, 2-c, 3-a, 4-d, 5-e

7. Predict the output.

```c
#include<stdio.h>
int main()
{
    int i=0;
    for(i=0;i<20;i++)
    {
        switch(i)
        {
            case 0: i+=5;
            case 1: i+=2;
            case 5: i+=5;
            default: i+=4;
            break;
        }
        printf("\n%d",i);
    }
}
```

- ○ 1823
- ◉ 1621
- ○ 914
- ○ 1623

8.

What would the following program produce when executed?

```c
#include<stdio.h>
int main()
{
    if( 4 < 5 )
        printf("Hai\n");
        printf("Hello");
    else
        printf("Bye");
    return 0;
}
```

- ● Compile time error
- ○ Hai
  Hello
- ○ Bye
- ○ Hai

9. **The following arithmetic expression in C evaluates to?**

```c
16 / 2 + 2 - 7 * 3 + 146 % 100
```

- ○ 25
- ○ -25
- ○ -35
- ● 35

10. **Guess the output of the following C program?**

```c
#include <stdio.h>
int main()
{
    int x = 0, y = 5;
    if (x && y)
        printf("A");
    else if (!x || y)
        printf("B");
    else
        printf("C");
}
```

- ○ A
- ○ C
- ● B
- ○ Compilation Error

11.

Predict the output of the following piece of code?

```c
#include<stdio.h>
void main(){
    int a, b, c, v;
    a = 9, v = 27;
    while(v>5){
        a = a+v;
        c = a-10;
        while(c>7){
            b = v+c;
            c = c-60;
        }
        v = v/3;
    }
    printf("%d %d %d", a, c, v);
}
```

○ None of the mentioned options

○ 45 25 3

◉ 45 -25 3

○ 89 -41 4

12.
What is the output of the following program?

```c
#include<stdio.h>
int main()
{
    int n=10;
    while(1)
    {
        if(n==1)
            break;
        if(n%2==0)
            n=n/2;
        else
            n=3*n+1;
        printf("%d ",n);
    }
    return 0;
}
```

○ 10 5 2 1

○ 5 2 1

◉ 5 16 8 4 2 1

○ Infinite loop

13. What is the output for the following code, if the value of a is 20 and b is 35?
Integer a, b
Input a, b

a = b
b = a
Print(a,b)

- ○ 20 35
- ◉ 35 35
- ○ 20 20
- ○ 35 20

14. **What will be the output of the following pseudocode?**
    integer a =50, b =25, c =5
    print a * b / c + c

    - ◉ 255
    - ○ 125
    - ○ 120
    - ○ 256

15. **What will be the output of the following pseudocode?**
    1. Integer a, b, c
    2. Set a = 5, b = 10, c = 10
    3. c = a
    4. a = (a ^ a) + b
    5. b = (b & 3) + c
    6. Print a + b + c

    [Note- &: bitwise AND - The bitwise AND operator (&) compares each bit of the first operand to the corresponding bit of the second operand. If both bits are 1, the corresponding result bit is set to 1. Otherwise, the corresponding result bit is set to 0.
    ^ is the bitwise exclusive OR operator that compares each bit of its first operand to the corresponding bits of its second operand. If one bit is 0 and the other bit is 1, the corresponding result bit is set to 1. Otherwise, the corresponding result bit is set to 0.]

    - ○ 17
    - ◉ 22
    - ○ 26
    - ○ 33

16. **What will be the output of the following pseudocode?**
    1. Integer x, y
    2. Set x = 4, y = 7
    3. x = x + y
    4. y = x - y
    5. x = x + 4
    6. Print x, y

    - ○ None of the mentioned options

- ⦿ 15 4
- ○ 4 7
- ○ 11 4

17. **What will be the output of the following pseudocode?**
    1. Integer a, b, c
    2. Set a = 4, b = 3, c = 2
    3. if((b ^ (a & b)) && (b ^ (a & c)))
    4.   a = a + b
    5. End if
    6. Print a + b + c

    [Note-&&: Logical AND - The logical AND operator (&&) returns the Boolean value true (or 1) if both operands are true and return false (or 0) otherwise.
    &: bitwise AND - The bitwise AND operator (&) compares each bit of the first operand to the corresponding bit of the second operand. If both bits are 1, the corresponding result bit is set to 1. Otherwise, the corresponding result bit is set to 0.
    ^ is the bitwise exclusive OR operator that compares each bit of its first operand to the corresponding bits of its second operand. If one bit is 0 and the other bit is 1, the corresponding result bit is set to 1. Otherwise, the corresponding result bit is set to 0.
    If(x) gets executed if the value inside if(), i.e., x is not zero.]

    - ⦿ 12
    - ○ 17
    - ○ 29
    - ○ 9

18. **What will be the output of the following pseudocode?**
    1. Integer a, b, c
    2. Set a = 4, b = 7, c = 5
    3. if(8>c || (6&a)<b)
    4.   b=7
    5.   c=c
    6. End if
    7. Print a+b+c

    [Note- &: bitwise AND - The bitwise AND operator (&) compares each bit of the first operand to the corresponding bit of the second operand. If both bits are 1, the corresponding result bit is set to 1. Otherwise, the corresponding result bit is set to 0.]

    - ○ 14
    - ⦿ 16
    - ○ 28
    - ○ 17

19. **What will be the output of this code?**
    a = 8

```
b = 10
c = b - a
Repeat till(c<=2){
    print(c)
    c=c+1
}
```

- ○ 2 1 2000
- ○ -2 -1 0 1 2
- ○ 2 1 0 -1 -2
- ◉ 2

20. **What will be the output of the following pseudo code?**
    Declare variable x, y and i
    Set x =0 and y =1
    for(int i=1; i<=4; i=i+1)
        print x
        x = x + y
        y = x / y
    End of loop

    - ○ 1 0 2 4
    - ◉ 0 1 2 4
    - ○ 4 2 0 1
    - ○ 0 1 2 3

21. **What will be the values of t if a=56 , b=876?**
    read a,b
    function mul(a,b)
        t=0
        while (b!=0)
            t=t+a
            b=b-1
        end while
        return t;
    end function

    - ○ 490561
    - ○ 490563
    - ○ 490562
    - ◉ 49056

22. **What will be the output of the following pseudocode for a = 1, b = 1?**
    1. Integer funn(Integer a, Integer b)
    2.   a = b - ((a + b + a) - (a - b - a))
    3.   b = a - ((a + b + a) - (a - b - a))
    4.   return 100 + a + b

5. **End function funn()**

- ○ 107
- ○ 97
- ◉ 98
- ○ 100