Roll Number.....

JAMIA HAMDARD
School of Engineering Sciences & Technology
Department of Computer Science & Engineering
New Delhi-110062

Odd Semester Examination 2022

Paper Name: Introduction to C - Programming
Paper Code: BCA-101 / BSC-101
Time: 3 Hours **Maximum Marks: 60**

Section – A **CO*: CO1 and BL*: L1, L2, L3, L4, L5.**

Note: Attempt ALL questions. Each question carries 1 mark.

1. Software can be categorized into system software and application software. (True / False)
2. Algorithm is the graphical representation of logic. (True / False)
3. C is a highly portable language. (True / False)
4. sizeof( ) is a function that returns the size of a variable. (True / False)
5. White spaces are permitted within identifier names. (True / False)
6. Sequencing, branching and looping constructs are sufficient to write a complete C – program. (True / False)
7. A function can return many values to the called function without using pointer. (True / False)
8. *"continue"* keyword skip a part of the loop and transfer control to the beginning of the loop? (True / False)
9. FILE is not a defined data type in C.
10. It is possible to make a pointer point to another pointer, provided the pointers are of the different data type. (True / False)

Note: Attempt ALL questions. Each question carries 1 mark.

1. An array is
   a) A collection of homogeneous data types stored in contiguous memory locations.
   b) A collection of heterogeneous data types stored in contiguous memory locations.
   c) A collection of homogeneous data types stored in discontinuous memory locations.
   d) A collection of heterogeneous data types stored in discontinuous memory locations.
2. If a is an integer variable, a=5/2; will return a value
   a) 2.5 b) 3 c) 2 d) 0
3. How many times the while loop in the following C code will be executed?

```
#include <stdio.h>
int main(void)
{
    int i = 2;
    while(i<=1000)
    {
            printf("%d", i);
            i=i+i/2;
    }
    return (0);
}
```

a) 10 b) 12 c) 14 d) 16

4. What will be the output of the following program?

```
#include <stdio.h>
int rec(int, int, int);
int main(void)
{
    int i=512, j=256, k=1024;
    int x=rec(i, j, k);
    printf("%d", x);
    return (0);
}
int rec(int p, int q, int r)
{
    int m, n, o;
    m=p%r;
    n=q%r;
    o=m%n;
    if(o = = 0)
    {
            return (n);
    }
    else
    {
            return(rec(m,n,o));
    }
}
```

a) 512 b) 256 c) 1024 d) 128

5. What will be the output of the following code?

```
#include <stdio.h>
int main()
{
    int i = 2, j = 100;
    while (i<100 && j>2)
    {
            i=i + j/2;
            j=j - 2*i;
    }
    printf("%d %d", i, j);
return (0);
}
```

a) 52 -4 b) Syntax Error c) 52 -8 d) 100 -8

6. Which of the following statement is not correct:

a) int x='A'; c) int x[2][]={1, 2, 3, 4};

b) int x[][2]={'a', 'b', 'c'}; d) int *x;

7. What will be the output of the following code?

```
#include <stdio.h>
void main()
{
    int i = 1;
    while (i<=10);
    {
            i++;
            printf("\n%d", i);
    }
}
```

a) 1 to 10 b) Syntax Error c) Program does not terminate d) 2 to 11

8. What will be the output of the following code?

```
#include <stdio.h>
void main()
{
    int x=100, y=200, num = 150;
    y = (num < 250 ? (x=num > 50 ? 300 : 400) : 500);
    printf("\n%d %d", x, y);
}
```

a) 100, 500 b) Syntax Error c) Program does not compile d) 300, 300

9. C does not support the concept of:
   a) Structured Programming
   b) Object Programming
   c) Procedural Programming
   d) Modular Programming

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

```
#include <stdio.h>
void main()
{
    if(0)
    {
            printf("Hello World!");
    }
    else
    {
            printf("Hello Dear!");

    }
}
```

a) Syntax Error b) Hello Dear! c) Compile Error d) Hello World!

Section - B

Note: Attempt any FOUR questions. Each question carries 5 marks.

Q. No.	Questions	CO*	BL*
1.	What are the 10 most important features of C-programming? Explain in detail.	CO1	L1, L2
2.	Explain the relational and logical operators used in C with programming examples.	CO2	L1, L2, L3
3.	Differentiate between for, while and do-while loops with proper programming examples.	CO2	L2, L4
4.	Explain the concept of call by reference and design a program to swap two numbers using call by reference.	CO4	L3, L5
5.	What is a string in C? Write a program to check whether a given string is palindrome or not.	CO4	L3, L5
6.	Write a program to multiply two matrices.	CO3	L3, L5

SECTION-C

Note: Attempt any TWO questions. Each question carries 10 Marks.

Q. No.	Questions	CO*	BL*
1.	Define algorithm. Write the pseudo code and draw the flow chart to compute the sum of digits of an integer number.	CO1	L1, L2
2.	Differentiate between Structure and Union and also write a program to demonstrate the use of structure.	CO4	L3, L6
3.	Define recursion. Write a program to convert a decimal number to its binary equivalent using recursion.	CO4	L1, L3, L5
4.	What is primary advantage of using file in C? Write a program to read the data from keyboard and write to a file; then read the data from the file and display it on the screen.	CO5	L2, L3, L6

CO* - Course Outcomes from Syllabus, BL* - Bloom's Taxonomy Levels (1: Remembering, 2: Understanding, 3: Applying, 4: Analysing, 5: Evaluating, 6: Creating)