Time: 03:00 Hours   Max. Marks: 100

General Instructions:

1. All questions are compulsory. It comprises of three Sections A, B and C.

- Section A - Question No- 1 is objective type question carrying 1 mark each & Question No- 2 is very short type questions carrying 2 marks each.
- Section B - Question No- 3 is Long answer type - I questions carrying 6 marks each.
- Section C - Question No- 4 to 8 are Long answer type - II questions carrying 10 marks each.
- No sheet should be left blank. Any written material after a Blank sheet will not be evaluated/checked.

<div align="center">SECTION A   20</div>

1. Attempt all parts:-

1-a.	The decimal equivalent of (0.101) base 2 will be (CO1)	1

         1. 0.5
         2. 0.625
         3. 0.25
         4. 0.875

1-b.	Which is responsible for communication between Memory and ALU? (CO1)	1

         1. Control unit
         2. RAM
         3. Keyboard
         4. USB

1-c.	Which is correct with respect to size of the data types? (CO2)	1

         1. char > int > float
         2. int > char > float
         3. char < int < double
         4. double > char > int

1-d.	An operator used to check a condition and select a value depending on the value of the condition is called _____ (CO2)	1

         1. Logical operator
         2. Decrement operator
         3. Conditional or Ternary operator
         4. Bitwise operator

1	What will be the output after execution of the program? (CO3)	1

```
#include<stdio.h>
int main()
{
int i=5;
```

```
while(i)
printf("Programming");
printf("Hello\n");
return 0;
}
```

        1. It will print "Programming" 5 times

        2. It will print "Hello" infinite times

        3. It will print "Programming" infinite times

        4. It will print "ProgrammingHello" infinite times

1	What is the other statement that can avoid multiple nested if conditions? (CO3)	1

        1. Functions

        2. Switch statements

        3. If-else statements with 'break'

        4. Loop statements

1	Which of the following is true about return type of functions in C? (CO4)	1

        1. Functions can return any type

        2. Functions can return any type except array and functions

        3. Functions can return any type except array, functions and union

        4. Functions can return any type except array, functions, function pointer and union

1	Size of a union is determined by size of the _____ (CO5)	1

        1. First member in the union

        2. Last member in the union

        3. Biggest member in the union

        4. Sum of the sizes of all members

1	What will be the output of the following program? (CO5)	1

```
void main()
{
int x = 20;
int *p = &x;
int **q = &p;
printf("%d%d%d", a, *p, **q);
}
```

        1. 20 garbage garbage

        2. 20 20 20

        3. Garbage values

        4. None of above

1	What is a shell script? (CO5)	1

        1. group of commands

        2. a file containing special symbols

        3. a file containing a series of commands

        4. group of functions

2. Attempt all parts:-

2	What do you understand by flowchart? (CO1)	2
2	What is enumerated data type? (CO2)	2
2	What is the advantage of using loops? (CO3)	2
2	what is the role of preprocessor directive? (CO4)	2

2	What are the demerits of array? (CO5)	2

<div align="center">SECTION B   30</div>

3. Answer any <u>five</u> of the following:-

3	Write a program in C that accepts the marks of 5 subjects and finds the sum and percentage marks obtained by the student. (CO1)	6
3	Differentiate between implicit & Explicit type conversion. (CO2)	6
3	Differentiate the following: Break and Continue statement (with example) (CO3)	6
3	What are library functions? Give example. (CO4)	6
3	List the differences between 'structure' and 'union'. (CO5)	6
3	WAP that simply takes elements of the array from the user and finds the sum of these elements. (CO5)	6
3	What are different file functions? Explain each. (CO5)	6

<div align="center">SECTION C   50</div>

4. Answer any <u>one</u> of the following:-

4	Explain primitive data type with their format specifier, size in bytes and range. (CO1)	10
4	Write an algorithm and draw flowchart to print reverse of a number. (CO1)	10

5. Answer any <u>one</u> of the following:-

5	What are operators? Mention different types of operators in C. (CO2)	10
5	Explain various file opening modes in C language. (CO5)	10

6. Answer any <u>one</u> of the following:-

6	Define the switch statement. Also write the characteristics of switch statement. Write a menu driven program to simulate the calculator. (CO3)	10
6	WAP to print Armstrong numbers from 100 to 999. (CO3)	10

7. Answer any <u>one</u> of the following:-

7	Write a program in C that computes the area and circumference of a circle with radius taken as input using call by reference in functions. (CO4)	10
7	What do you mean by storage class? Define the various storage classes in C. Explain each with suitable example. (CO4)	10

8. Answer any <u>one</u> of the following:-

8	WAP to enter and display record of a student using structure where members can be name, age, roll no and marks. (CO5)	10
8	Define array. How an array can be passed to a function. Discuss in detail. (CO5)	10