GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER–I & II(NEW) EXAMINATION – WINTER 2022

Subject Code:3110003   **Date:07-03-2023**

Subject Name:Programming for Problem Solving

Time:10:30 AM TO 01:00 PM   **Total Marks:70**

Instructions:
1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

			Marks
Q.1	(a)	List out and briefly explain basic building blocks of Computer system.	03
	(b)	Describe various symbols used for preparing flow chart.	04
	(c)	List and explain different data types available in C.	07
Q.2	(a)	Demonstrate the working of bitwise shift and *sizeof* operator with an example.	03
	(b)	Differentiate *while* and *do..while* loop.	04
	(c)	Write a C program to check whether the entered character is alphabet, digit, space or any special character.	07

OR

	(c)	Write a C program to print following pattern:	07

```
1
2 2
3 3 3
4 4 4 4
```

Q.3	(a)	Find out error(s), if any in the following code and correct it:	03

```c
int main() {
    if(10%2==0){
        break;
    }
}
```

	(b)	Examine following code and give output of it.	04

```c
void main(){
    int a=0;
    while (a<10) {
        a++;
        if (a%3==1) {
            continue;
        }
        printf (" %d", a);
    }}
```

	(c)	Write a C program to find factorial of a given number.	07

OR

Q.3	(a)	Find out error(s), if any in the following code and correct it:	03

```c
int main() {
    printf("%f %d", 7.0%5.0, 5 || -2);
}
```

	(b)	Examine following code and give output of it.	04

```c
void main(){
    int i=1;
```

```
      for (i=10; i>=1 ; --i) {
         printf (" %d", i);
         i--;
      }
   }
```

	(c)	Write a C program to make sum of digits of a given number. (if input is 145, output should be 10)	07
Q.4	(a)	Difference between *call by value* and *call by reference*.	03
	(b)	Explain the concept of recursion with an example.	04
	(c)	Write a C program to make sum of array elements.	07

OR

Q.4	(a)	Briefly explain storage class *auto* and *extern*.	03
	(b)	Explain *switch* statement with an example.	04
	(c)	Write a C program to sort an array in ascending order.	07

Q.5	(a)	Give the significance of *getc()*, *getw()*, *fscanf()*.	03
	(b)	Compare structure and union.	04
	(c)	Describe categories of User defined function.	07

OR

Q.5	(a)	List down and briefly explain methods for dynamic memory allocation.	03
	(b)	Write a C program to copy content of one file to other with the help of file handling functions.	04
	(c)	Explain any four string handling functions with an example.	07