Guru Nanak Dev Engineering College, Ludhiana			
Department of Applied Sciences			
Program	B.Tech.CSE, IT	**Semester**	1
Subject Code	ESE-104	**Subject Title**	Programming for Problem Solving
Test	2	**Course Coordinator(s)**	Ranjodh Kaur, Siddharth Jain, Gagneet Kaur, Kapil Sharma,Jaswant Singh,Sita Rani, Kuljit Kaur
Max. Marks	24	**Time Duration**	1 hour 30 minutes
Date of Test	16th October, 2023	**Roll Number**	

Note: Attempt all questions. All assumptions must be clearly stated.

Q. No.	Question	MM
Q1	Briefly illustrate semantic and logical errors with the help of examples.	2

Q2	What will be the output for the following code snippet:
	`int main ( )`
	`{`
	`int i=1,j=1;  int a = 0;`
	`int y;    int x = 11; char c='A';`
	`y = sizeof(x++);`
	`printf("%i  %i  %i", y, x,sizeof(c));`
	`double d = 10.5;`
	`printf("  %lu", sizeof(a + d));`
	`for(i=1;i<=3;i++)`
	`{`
	`for(j=1;j<=3;j++)`
	`{`
	`if(++i ==2 || --j==2)`
	`{`
	`continue;`
	`}`
	`printf("  %d",i);`
	`printf("  %d",j);`
	`if(++i==4 || --j==3)`
	`{`
	`break;`
	`}`
	`}`
	`}`
	`printf("  %d",i);`
	`printf("  %d",j);`
	`return 0;`
	`}`
		2

Q3	Define flowchart. Construct a flowchart and write an algorithm to find how many times the digit **D** appears in the number **N**.	4
Q4	Differentiate between call by value and call by reference with the help of examples.	4
Q5	Create a user-defined function to find the square of any positive integer number read through the keyboard. Make use of parameter passing and return type concepts.	4
Q6	Develop a menu driven code that does the following: • If 'A' is entered, user-defined function '**isPalindrome**' must be able find whether number entered by user is palindrome or not. • If 'B' is entered, user-defined function '**kgToPounds**' must be able to convert kilograms to pounds, value to be converted must be read through the keyboard. (One kilogram is equal to 2.204 pounds). • If any other 'character' is entered, code must be able to terminate with a suitable message. [Make use of parameter passing and return type concepts while developing code.]	8