GRADE 11COMPUTER SCIENCE LAB PRACTICE C PROGRAMMING

1. **Write a program to print Hello World.**

    ```c
    #include <stdio.h>

    int main() {
        printf("Hello, World!\n");
        return 0;
    }
    ```

2. **Write a program to print your Name.**
    ```c
    #include <stdio.h>
    int main() {
        printf("My name is Rajesh parajuli\n");
        return 0;
    }
    ```

3. **Write a c program to difference the direct value declare and user input value.**
    ```c
    #include <stdio.h>
    int main() {
        // Direct declaration (values assigned directly)
        int a = 10;
        printf("the value of a is %d\n", a);

        // User input (values entered by user)
        int b;
        printf("Enter two numbers: ");
        scanf("%d ", &b);
        printf("User entered b value is %d\n", b);

        return 0;
    }
    ```

4. **Write a c program to add to numbers.**
    ```c
    #include <stdio.h>
    int main() {
        int num1, num2, add;
        printf("Enter two numbers: ");
        scanf("%d %d", &num1, &num2);
        add = num1 + num2;
        printf("Sum is  %d", add);
        return 0;
    }
    ```

5. **Write a C program to perform all arithmetic operations (+,-,*,/,%)**

```c
#include <stdio.h>

int main() {
    int num1, num2;
    int addition, subtraction, multiplication, division, remainder;
    printf("Enter two numbers: ");
    scanf("%d %d", &num1, &num2);
    addition = num1 + num2;
    subtraction = num1 - num2;
    multiplication = num1 * num2;
    division = num1 / num2;
    remainder = num1 % num2;

    printf("Addition is %d\n", addition);
    printf("Subtraction is %d\n", subtraction);
    printf("Multiplication is %d\n", multiplication);
    printf("Division is %d\n", division);
    printf("Remainder is %d\n", remainder);
    return 0;
}
```

6. **Write a c program to program to find the square of a number.**

```c
#include <stdio.h>
int main() {
    int number, square;
    printf("Enter a number: ");
    scanf("%d", &number);
    square = number * number;
    printf("Square of %d is %d\n", number, square);

    return 0;
}
```

7. **Write a program to find the area of a rectangle.**

```c
#include <stdio.h>

int main() {
    int length, width, area;
```

```c
    printf("Enter length of the rectangle: ");
    scanf("%d", &length);
    printf("Enter width of the rectangle: ");
    scanf("%d", &width);
    area = length * width;
    printf("Area of the rectangle = %d\n", area);

    return 0;
}
```

8. **Write a c program to calculate the simple interest.**

```c
#include <stdio.h>
int main() {
    float principal, rate, time, simpleInterest;
    printf("Enter principal amount: ");
    scanf("%f", &principal);

    printf("Enter rate of interest (in %%): ");
    scanf("%f", &rate);

    printf("Enter time (in years): ");
    scanf("%f", &time);

    simpleInterest = (principal * rate * time) / 100;

    printf("Simple Interest = %.2f\n", simpleInterest);

    return 0;
}
```

9. **Write a program to find the largest of two numbers.**

```c
#include <stdio.h>
int main() {
    int num1, num2, largest;
    printf("Enter two numbers: ");
    scanf("%d %d", &num1, &num2);
    if(num1 > num2) {
        largest = num1;
    } else {
        largest = num2;
    }
    printf("The largest number is %d\n", largest);
    return 0;
}
```

10. Write a program to check whether a number is even or odd.

```c
#include <stdio.h>
int main() {
    int num;
    printf("Enter a number: ");
    scanf("%d", &num);
    if (num % 2 == 0) {
        printf("%d is Even\n", num);
    } else {
        printf("%d is Odd\n", num);
    }
    return 0;
}
```

11. Write a C program to find factorial of a number.

```c
#include <stdio.h>

int main() {
    int num, i;
    int factorial = 1;
    printf("Enter a number: ");
    scanf("%d", &num);

    for(i = 1; i <= num; i++) {
        factorial = factorial * i;
    }
    printf("Factorial is %d\n", factorial);
    return 0;
}
```

12. Write a program to check whether a number is prime.

```c
#include <stdio.h>
int main() {
    int num, i;
    printf("Enter a number: ");
    scanf("%d", &num);

    for(i = 2; i < num; i++) {

        if(num % i == 0) {
            printf("%d is not a Prime number\n", num);
```

```c
        return 0;
    }

   }

   if(num > 1)
      printf("%d is a Prime number\n", num);
   else
      printf("%d is not a Prime number\n", num);
   return 0;
}
```

13. Write a program to find sum of first n natural numbers.

```c
#include <stdio.h>
int main() {
   int n, sum = 0, i;
   printf("Enter a number: ");
   scanf("%d", &n);
   for(i = 1; i <= n; i++) {
      sum = sum + i;    }
   printf("Sum of first natural numbers is  %d\n", sum);
   return 0;
}
```

14. Write a program to swap two numbers.

```c
#include <stdio.h>
int main() {
   int a, b, temp;
   printf("Enter two numbers: ");
   scanf("%d %d", &a, &b);
   printf("Before swapping: a = %d, b = %d\n", a, b);
   temp = a;
   a = b;
   b = temp;
   printf("After swapping: a = %d, b = %d\n", a, b);
   return 0;
}
```

15. Write a program to print multiplication table.

```c
#include <stdio.h>
int main() {
    int num, i;
    printf("Enter a number: ");
    scanf("%d", &num);
    printf("Multiplication table of %d:\n", num);
    for(i = 1; i <= 10; i++) {
        printf("%d x %d = %d\n", num, i, num * i);
    }
    return 0;
}
```

16. Write a c program to count numbers from 1 to 10 using for, while, and do-while.

For LOOP

```c
#include <stdio.h>
int main() {
    int i;
    printf("Counting using for loop:\n");
    for(i = 1; i <= 10; i++) {
        printf("%d ", i);
    }
    printf("\n");
    return 0;
}
```

While LOOP

```c
#include <stdio.h>
int main() {
    int i = 1;
    printf("Counting using while loop:\n");
    while(i <= 10) {
        printf("%d ", i);
        i++;
    }
    printf("\n");
    return 0;
}
```

Do-While LOOP

```c
#include <stdio.h>
```

```c
int main() {
    int i = 1;
    printf("Counting using do-while loop:\n");
    do {
        printf("%d ", i);
        i++;
    } while(i <= 10);
    printf("\n");
    return 0;
}
```

17. Write a c program to use switch case.

```c
#include <stdio.h>
int main() {
    int day;
    scanf("%d", &day);

    switch(day) {
        case 1: printf("Sunday\n");
        break;
        case 2: printf("Monday\n");
        break;
        default: printf("Other day\n"); break;
    }
    return 0;
}
```

18. Write a program to store and print elements of an array.

```c
#include <stdio.h>
int main() {
    int arr[5];
    int i;
    printf("Enter 5 numbers:\n");
    for(i = 0; i < 5; i++) {
        scanf("%d", &arr[i]);
    }
    printf("The elements of the array are:\n");
    for(i = 0; i < 5; i++) {
        printf("%d\n ", arr[i]);
    }
```

```
        return 0;
    }
```

19. Write a program to calculate the sum of array elements

```c
#include <stdio.h>
int main() {
    int arr[] = {10, 25, 7, 89, 54};
    int total = 0;

    for(int i = 0; i < 5; i++) {
        total += arr[i];
    }
    printf("total elements sum is %d\n", total);
    return 0;
}
```

20. Write a c program to add two 2×2 matrices

```c
#include <stdio.h>
int main() {
    int matrix1[2][2], matrix2[2][2], sum[2][2];
    int i, j;

    // Input elements of first matrix
    printf("Enter elements of first 2x2 matrix:\n");
    for(i = 0; i < 2; i++) {
        for(j = 0; j < 2; j++) {
            scanf("%d", &matrix1[i][j]);
        }
    }

    // Input elements of second matrix
    printf("Enter elements of second 2x2 matrix:\n");
    for(i = 0; i < 2; i++) {
        for(j = 0; j < 2; j++) {
            scanf("%d", &matrix2[i][j]);
        }
    }

    // Add the two matrices
    for(i = 0; i < 2; i++) {
```

```c
        for(j = 0; j < 2; j++) {
            sum[i][j] = matrix1[i][j] + matrix2[i][j];
        }
    }

    // Display the sum
    printf("Sum of the two matrices:\n");
    for(i = 0; i < 2; i++) {
        for(j = 0; j < 2; j++) {
            printf("%d\t", sum[i][j]);
        }
        printf("\n");
    }
    return 0;
}
```