**Practical 1**

1. Write a program to demonstrate class, constructor, properties and method
2. Write a program to demonstrate method overloading?
3. Create a class Calculate which contains data member num1 and num2 both in integer and methods setCalc() to set the data, calcSum() that calculate the sum of num1 and num2 and display the result, calcMulti() that calculate the multiplication of num1 and num2 and returns the result, calcDifference that calculate the difference between num1 and num2 and display the result. Now, create some instance of Calculate and invoke all the methods.
4. Create a class Number having instance variable x and y both in integer, default constructor that set the value of x and y to 0, parameterized constructor that sets the value of x and y, method findOdd() that calculates the even no. occurring between x and y and display the result, findEven() that calculates the odd no. occurring between x and y and display the results. Now, create some instance of Number and invoke all the methods.
5. Create a class Shape that contains instance variable length, breadth and height. Create a default constructor that sets the value of instance variable to zero, constructor with two parameter that will sets the value of length and breadth only and constructor with three parameter that will sets the value of length, breadth and height. After this create calcAreaRectangle() that calculates the area of rectangle, calcVolumeBox() that calculates volume of box and display the result. Now create first object of Shape wihich will have name rectangle and calls constructor with two parameter and calAreaRectangle() method, create second object of Shape that will have name Box which will call constructor with three parameter and calcVolumeBox() method.
6. Create a class EmployeeDetails having data member empId, empName, empGender, empAddress, and empPosition, constructor to set the details and display method to display the details. Create a subclass SalaryInfo that will inherit EmployeeDetails having own data member salary which will record salary per year, constructor to set the value of salary and method calcTax() that deduct the tax on salary and display the final salary. Tax rate is given as (if salary <= 400000 tax is 1%, salary between 400001 to 800000 tax is 10% and salary > 800000 tax 20%). Now create the object of Salary info and demonstrate the scenario.
7. Write a program to demonstrate single level, multilevel inheritance?
8. Write a program to demonstrate use of base keyword
9. Write a program to demonstrate method overriding (dynamic polymorphism)?
10. Write a program to demonstrate multiple inheritance using interface
11. Write a program to demonstrate abstract class
12. Write a program to demonstrate exception handline (try, catch, throw throws)
13. Write a program to demonstrate interface
14. Write a program to demonstrate lamda expression

**Practical 2**

1. Create a web form that contains two label that display Enter first number and enter second number, two text box for taking an input, third text box for output and three button add, subtract and find prime. Add proper validation like text box should not be empty, value of first field should be greater than value of second field. If add button is clicked display the addition of two number given in textboxes, if subtract button is clicked display the subtraction of two number given in textboxes and if findprime is clicked then display the prime number from first value to second value given in textboxes.
2. Write a console program (ADO.net) to create a table tbl\_registration that have fields (id int primary key, username, password, repassword, gender, course and country). After this perform the following operation

* Insert any 5 data into tbl\_registration. All the required input should be taken from user
* Display all the record of database table
* Update the name and course of a person to data given by user according to id given by user
* Delete the record of person whose id is given by user
* Display all the record of person who are male and also from country Nepal

1. For the table created in question no. 3, create a web form for registration which should contains username, password, repassword, gender (radio button), course (checkbox) and country (dropdown) and submit button. When submit is pressed insert the value given by user into database table. Use proper validation: username, password and repassword should not be empty, item of radio button, checkbox and dropdown menu should be selected.

**Practical 3**

1. Demonstrate model, view and controller by showing different action method, views, model, accessing controller, model and view.
2. Demonstrate use of razor syntax
3. Demonstrate use of html tag helper
4. Using Entity framework create a table tbl\_officer having field (id, name, gender, phone, department and position) after this perform complete CRUDE operation (insert, update, display and delete). User proper validation.
5. Demonstrate different state management technique like SessionState, TempData, HttpContext
6. Demonstrate different client-side state management like cookies, Query string and hidden fields
7. Write a program to create complete form and validate using jquery and react
8. Write a program to demonstrate authentication and authorization (Role, claim and policies) by create a complete form in asp.net core
9. Write a program to prevent SQLInjectionAttack, Cross Site Request forgery (CSRF) and open redirect attack