First Assignment

1. Why C is called structured programming language? Write an algorithm and draw a flowchart to find the greatest number among any three numbers.
2. Explain the Compilation and Execution process in C? Write an algorithm and draw the flowchart to find the entered number is odd or even.
3. Write an algorithm and draw the flowchart to find the entered number is positive or negative.
4. Explain Deterministic and Non-Deterministic algorithm design techniques.
5. Define variables and constants. Explain about variables types (data types) and operator in C (Any five)
6. What are the rules for naming variables? Explain different types of constant with examples.
7. Differentiate between break and continue statements with suitable example.
8. An electric power distribution company charges its domestic consumers as follows:

Consumption Units	**Rate of charges**
2-200	Rs. 0.50 per unit
201-400	Rs. 100 plus Rs. 0.50 per unit excess of 200
401-600	Rs. 230 plus Rs.0.80 per unit excess of 400
600-above	Rs. 390 plus Rs.1.00 per unit excess of 600

   WAP to read costumer number and power consumed in units and print amount to be paid by the customer.
9. What is control statement? Differentiate entry-controlled loop and exit-controlled loop.
10. Explain switch statement with example.
11. Write a program to display the Fibonacci series of N terms.
12. Write a program to check whether the entered number is prime number or composite number.
13. What is the use of nested loop? Write a program to print Armstrong numbers from 100 to 999.
14. Write a C program to output following pattern using looping statement.

```
    *
   **
  ***
 ****
*****
```

15. What are the advantages of using functions? Write a program to find the sum of any number using function.
16. Write a program to find the multiplication table of any number using function.
17. What is recursion? Write a recursive program to find factorial of n number using recursion function.
18. What is the difference between pass by value and pass by reference with example.
19. What are storage classes in C? Describe each of them with their scope and lifetime.
20. Define macro. Write a macro code to display area of circle.

Second Assignment

1. Write a program to read n numbers and display those numbers in reverse of ascending order and also find smallest and largest number among them.
2. Write about linear and binary searching techniques with their advantages and disadvantages.
3. Write a program to input any 3×2 matrix and find the transpose of it.
4. Write a program to print sum of diagonal elements of any given 4 by 4 matrix.
5. What is string? Explain any five string handling functions along with suitable program.
6. Write a program to read n students names and display names on alphabetical order.
7. Create a menu driven program that has the following options:
   a. Calculate the sum of first 20 odd numbers
   b. Change the case of a string to lowercase.
   c. Compute multiplication table of a number.
   d. Exit.
8. Write a program to read a line of string and count no of vowels, consonants, digits and spaces.
9. What are pointers? Which arithmetic operations are possible with pointers? Explain with example.
10. Discuss relationship between array and pointer with an example.
11. "Returning Multiple values from Function" Explain this statement with suitable example.
12. What do you mean by nested type structure? Give an appropriate example to demonstrate the use of nested structure.
13. Create a structure named student which has members: symbol, name and obtained percentage. Read symbol, name and percentage of N students and prints the record of students who have passed in first division.
14. What is structure? Define a structure having member id, name, address and write program to input information about sixty students and display name of those students whose address is "pokhara".
15. Differentiate structure and union showing suitable example.
16. Write a program to input the name, program & CGPA of 200 students and store the information into a file. Finally, print the name, programme and CGPA of those students whose CGPA is greater or equal to 3.0.
17. Write a program to open a file named "student.dat" to keep the records of students (s_id, s_name, s_address) in a write mode and perform the following operations:
    i. Insert records into that file.
    ii. Display all those records for which s_id is greater than 2000
18. What is FILE pointer? Explain the various files opening modes in C programming.
19. What is significance of decomposing a project into various modules?
20. How data flow diagram helps while developing a project? Explain it with suitable example.