1 **A** Write a program to evaluate the following algebraic expressions after reading necessary values from keyword.

i) $(ax+b)/(ax-b)$ ii) $2.5\log x+\cos 32^{o}+|x^{2}+y^{2}|+2xy$

iii) $x^{5}+10x^{4}+8x^{3}+4x+2$ iv) ae^{kt}

B Write a program to calculate commission for the input value of sales amount. Commission is calculated as per the following rules:

i) Commission is **NIL** for sales amount Rs. 5000.

ii) Commission is 2% for sales when sales amount is >Rs. 5000 and <= Rs. 10000.

iii) Commission is 5% for sales amount >Rs. 10000.

2 **A** Write a program to find the grace marks for a studentusing switch. The user should enter the class obtained bythe student and the number of subjects he has failed in.

Use the following rules:

i. If the student gets first class and the number of subjects failed is >3, then no grace marks are awarded. If the number of subjects failed is less than or equal to '3' then the grace is 5 marks per subject.

ii. If the student gets second class and the number of subjects failed in is >2, then no grace marks are awarded. If the number of subjects failed in less than or equal to '2' then the grace is 4 marks per subject.

iii. If the student gets third class and the number of subjects failed in is >1, then no grace marks are awarded. If the number of subjects failed in is equal to '1' then the grace is 5 marks per subject

B Write a program to find the sum of individual digits of a positive integer using for loop

3 **A** Write a program to generate all the prime numbers between 1 and N using while loop

B Write a program to generate Fibonacci sequence for N numbers using do-while loop.

4 **A** Write a program to perform the following: i) Addition of two matrices.

ii) Multiplication of two matrices.

B Write a program to implement (i) Call by value (ii) Call by reference.

5 **A** Write a program to find factorial of a given number using recursion.

B Write a program that uses functions to perform the following operations:

Write a program to determine whether the given string is palindrome or not.

6 Define a structure to store employee's data with the following specifications:

Employee-Number, Employee-Name, Basic pay, Date of Joining

i. Write a function to store 10 employee details.

ii. Write a function to implement the following rules while revising the basic pay.

If Basic pay<=Rs.5000 then increase it by 15%.

If Basic pay> Rs.5000 and <=Rs.25000 then it increase by 10%.

If Basic pay>Rs.25000 then there is no change in basic pay.

Write a function to print the details of employees who have completed 20 years of service from the date of joining.

7 **A** Write a Program to calculate the sum of n numbers entered by the user using dynamic memory allocation functions.

B Write a Pointer Program to swap two numbers without using the 3rd variable.