Assignment 3

Chapter 9: Pointer

1. What is a **pointer**? What are the main reasons of using pointer?
2. Differentiate between ordinary variable & pointer variables. Also differentiate references & dereference operators.
3. State the main difference between *x & x in expression char *x.
4. Write down the similarities and differences between arrays & pointers.
5. Can the address of a function be passed to other functions as argument?
6. WAP to read two matrices of order M*N, P*Q & their elements. Validate multiplication size of matrices before user enters their elements. If matrices is multiplicable then display multiplied result otherwise display useful message to user and give access to re-enter size & elements. Use the concept of pointer in this program.
7. Using pointer, WAP to enter elements of square matrix & replace diagonal elements by 1.

Chapter 10: Files

8. WAP to open a new file. Read the name, address & telephone of 10 persons from the user and write to the file. After writing, display the content of the file.
9. Explain different types of file operations with examples.
10. Why are fwrite() & fread() functions used? Explain their arguments with examples.
11. Differentiate between:
    1. r+ and w+ file modes.
    2. fscanf() vs. scanf()
    3. text and binary files

Last date of Submission: **Falgun 9, 2076**

Chapter 11: FORTRAN

12. Write a program to read secured marks of a student and display PASS if the marks is greater than 40% else display "Fail".
13. Write a program in FORTRAN to compute the return amount (A) given by the expression $A=P(i(1+i)^n /((1+i)^n-1))$ on investment of P amount of money for n numbers of year and at interest rate i.
14. WAP to read a positive integer from the keyboard and count prime & composite digits in it.
15. WAP to evaluate the series $\cos(x) = 1 - x^2/2! + x^4/4! - x^6/6! + x^8/8! - \ldots (-1)^{(n)} x^{(2n)}/(2n)!$, n=1,2,3,4,…
16. WAP to test members of entered array element *Armstrong & Even* or not and display that members.
17. WAP to calculate the cost of operating an electrical devices using formula C=(WTK)/1000, where *W is number of Watts, T is time in hours* & *K is the Cost*(in rupees) per Kilowatt hours. Store the value of C in 3D array when W varies from 100 watts to 1000 watts in steps of 100, T varies from 1 hours to 10 hours in step of 1 and K varies from Rs. 1.0 to 10.0 in steps of 1 rupee. Display the content of array.
18. WAP to compute $R=X*Y+Z^T$, where R, X, Y & Z are matrices of valid order and Z^T is the Transpose of Z.
19. Differentiate:
    1. Stop vs. end statement
    2. Logical if vs. arithmetic if
    3. Do loop vs. implied loop

*Note: - Complete your assignment in **separate/new copy**, and submit that **before deadline**.*