SECTION - D

7. a. Differentiate between typedef and typecasting with suitable examples.

   b. Explain at least six file handling functions with a suitable example program. [4+8]

OR

8. a. Explain different header files and their importance.

   b. Explain the enumerated data type with a suitable example program. [6+6]

SECTION - E (Compulsory)

9. Answer the following in brief. [6×2=12]

   a) What are macros?

   b) What is a pointer in?

   c) How can a string be converted to a number?

   d) How to read a string separated by whitespaces?

   e) What are the different types of programming methodologies?

   f) What is the difference between a character array and a string?

[Total No. of Questions - 9] [Total No. of Printed Pages - 3]

DEC-23-1239

MCA-6101 (Programming in C)

MCA-1st CBCS/NEP

Time : 3 Hours Max. Marks : 60

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

Note: Attempt five questions in all by selecting one question each from section A, B, C and D. Section-E is compulsory.

SECTION - A

1. a. Write a program using ***nested if...else...*** statements that prompts the user to input three integers and gives the largest integer as output.

   b. Write an algorithm to check whether an input year is a leap year or not. [A leap year has 366 days and the February month has 29 days] [8+4]

OR

2. a. Explain the usage of ***break*** statement in conditional and loop control structures with proper examples.

   b. Write a program to input two numbers **a** and **b** and print all the prime numbers between the range (a, b). For example, if a=10 and b=20, the program will print the prime numbers 11, 13, 17, and 19. [4+8]

SECTION - B

3. a. Explain the difference between call by value and call by reference with suitable examples.

   b. Write a program to print the Fibonacci series using a user defined function ***fibonacci(n)*** where *n* is the number of terms in the series. For example, *fibonacci(5)* will print 0, 1,1,2,3. [6+6]

OR

4. a. Write a program to input two matrices A[m][n] and B[n][p] and display the resultant matrix after multiplying the matrices A and B.

   b. Explain the dynamic memory management functions. [8+4]

SECTION - C

5. Store the following information of 5 students using a structure **student**. The structure should have name (a string of 20 characters), registration number (integer), and marks in the three courses (floating point numbers). Then process the marks and find the average marks of all the three courses. [Example of one student data is shown: Student Name: FirstName LastName; Roll Number: 123456; Marks MI=43.5, M2=67.5, and M3=78.5]. [12]

OR

6. a. Explain the use of the string functions strcat() and strrev() with proper examples.

   b. Write a program to check a string is palindrome or not. For example, for the string "Madam, I'm Adam" the program should display "a palindrome". You must preprocess the string for removing punctuation marks, whitespaces and converting all the alphabets to either uppercase or lowercase before checking for palindrome. [8+4]

[P.T.O.]