(Pages : 2) **4698**

**Reg. No. : .....**

**Name : .....**

# Second Semester M.Sc. Degree Examination, August 2009
## Branch : Mathematics
## MM 224 : COMPUTER PROGRAMMING IN C
## (Prior to 2005 admn.)

Time: 3 Hours Max. Marks: 75

***Instruction*** *: Answer* ***five*** *questions using* ***Part A*** *or* ***Part B*** *from* ***each*** *questions.*

I. A) i) What is a character array ? How is it different from other type of arrays ?

ii) Write a program to find the transpose of a matrix.

B) i) How do you compare two strings ? How do you assign value to string variables ?

ii) Write a C program to find whether the given matrix is symmetric or not.

II. A) i) What are identifiers in C ? Explain basic data types in C.

ii) Explain the control statements in C.

B) i) Suppose a, b and c are the following functions of t.

$$b = \sin(t) + \cos(2t)$$

Write a program which reads t and prints the value of b.

ii) Write a program to read a floating point number from the keyboard and print its integer and fractional part. separately.

III. A) i) What is meant by pointers to pointers ? What is the difference between the array of pointers and pointers to the array ?

ii) Declare a pointer to an array of real numbers and find the average of the numbers.

**P.T.O.**

B) i) Differentiate between pointer variable and pointer constant.

ii) Differentiate between static allocation and dynamic allocation and how does linked list help in dynamic allocation.

IV. A) i) Write a C program involving structure variables that reads name and telephone number of your friends into the computer, sort the names in alphabetical order and then writes out lexicographically ordered list.

ii) Explain the salient features of type def.

B) i) What is the advantage of using a union in C ? How many data items can be stored in a union at one time ?

ii) What is meant by bitfield and what is the use of it ? How can a bit field used within a structure declaration ?

V. A) i) Write a program to illustrate the addition and deletion of item from linked list.

ii) Explain dynamic storage allocation using example.

B) i) Write a program to sort n numbers and print the result in descending order.

ii) Write a program to illustrate matrix multiplication.

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