Q.P. Code : 530201

(3 Hours)   [Total Marks : 80

N.B. : 1. Q1 is compulsory.
    2. Attempt any three questions from remaining five questions.
    3. Figures to right indicate full marks.
    4. Assume suitable data if necessary, but justify the same

1. (a) What do you mean by algorithm? Which points you should consider while   **4**
        developing the algorithm.

   (b) What is a relation between ARRAYS and pointers ? Explain with example   **4**

   (c) Explain ?: operator in C. Write a program to determine maximum of 3   **4**
        numbers using it.

   (d) What do you mean by extern and static storage class. Explain with example.   **4**

   (e) Difference between break and continue along with example.   **4**

2 (a) Write a program in C to accept an ARRAY A with n elements and Separate   **10**
      it into two different arrays B and C in such a way that B contains Odd
      numbers and C contains Even numbers i.e. if ARRAY A contains   **10**
      A= { 3,2,4,2,5,7,8} then B={ 3,5,7} , and C={2,4,2,8}

2. (b) Write a program to generate Pascal triangle upto n rows.

3. (a) What do you mean by Recursion ? write a program to reverse a number   **10**
      using recursion.

3. (b) Write a program to calculate compound interest and amount   **10**
      Using formulae A = P (1 + R/100)^n where P = Principal Amt , R is Rate of
      interest , n = number of Years . Your program should make use of user
      defined function to calculate power. Program should accept P , R and n
      ,Display interest earned for each year .

4. (a) Explain structures in C ? What do you mean by nested structure ? A company   **10**
      needs to maintain data about their employees. Details to be maintained are
      Employee name , Department , Date of joining , Salary. Write a program
      which will store these details and list the employees whose salary is greater
      than Rs. 50000.00

TURN OVER

4. (b) Write a program to perform matrix multiplication using user defined   **10**
functions Assume first matrix is of size M x N , second matrix of size N x
P and third matrix (Result matrix) is of size M x P
Program should include following user defined functions
     i. read_matrix   ii. Display_matrix   iii. Multiply_matrix

5. (a) Write a program to generate following patterns.   **10**
   i.   A
         C B
       F E D
     J I H G
   O N M L K

   ii. 1
     2 1
     1 2 3
     4 3 2 1
     1 2 3 4 5

5. (b) Write a program to calculate summation of series.   **10**
$1 - x^2/2! + x^4/4! - x^6/6! + x^8/8! - ...$upto n terms

6. (a) Write user defined functions to implement following string operations   **10**
    i. strcat   ii. strlen

6. (b) What do you mean by FILE? Write a program to copy text from one file to   **10**
other after converting Lower case letters to Upper case and vice versa. Keep
other characters as it is

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