

(i) Printed Pages: 3

Roll No. ....

(ii) Questions : 9 Sub. Code : 

4	5	8	0	7
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Exam. Code : 

1	2	1	9
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PGDCA 1<sup>st</sup> Semester

(2124)

COMPUTER PROGRAMMING USING C

Paper : PGD-1102

Time Allowed : Three Hours] [Maximum Marks : 60

**Note** :— Attempt FIVE questions in all, including Q. No. 9 in Section-E, which is compulsory and taking ONE each from Section-A to Section-D.

**SECTION-A**

1. (a) What are the various steps of problem solving on computers using a programming language ? Explain.  
(b) Develop an algorithm to generate first N terms of a Fibonacci series : 1, 1, 2, 3, 5, 8, 13, ....., N terms and find the sum of these N terms. 6,6
2. (a) What is scope, visibility and life time of variables in 'C' ? Explain external variables in 'C' with example.  
(b) Explain various types of operators available in C language and their order of execution. Explain taking examples. 6,6

## SECTION-B

3. How are multidimensional arrays declared and initialized in 'C' programming ? Write a program in 'C' language that takes two matrices  $A(M \times N)$  and  $B(N \times R)$  of integers as inputs and computes the matrix  $D(M \times R)$  where,  $D = A * B$ . 12
4. What is a function in 'C' ? Why is it important in 'C' ? Explain the call by value and call by reference mechanism for passing parameters in functions. 12

## SECTION-C

5. The 'C' language handles strings differently than many other languages. Explain how 'C' looks at strings differently than other programming languages and outline the pros and cons of how strings are accessed and treated in 'C'. Name and explain any four in-built string handling functions with suitable examples. 12
6. Explain the following in 'C' with examples :
- (a) Difference between nested structures and array of structures.
  - (b) Difference between a union and a structure. 6,6

## SECTION-D

7. Differentiate between formatted and unformatted I/O functions in 'C' programming. Give two examples of each. 12

8. What type of files can be created in 'C' for storing the data ?  
Write a program in 'C' to create and then store the first  
30 even integers in it. 12

### SECTION-E

#### (Compulsory Question)

9. (a) What are header files in 'C' and what is their purpose ?  
(b) Define the concept of recursion with an example.  
(c) Define the concept of array of pointers to strings with  
an example.  
(d) Explain the use of *gets()* and *puts()* functions in 'C'.

3×4=12