(i) Printed Pages : 4] Roll No. .....

(ii) Questions : 9] **Sub. Code : 8 6 0 2**

Exam. Code : 1 2 1 9

PGDCA 1st Semester Examination

1127

COMPUTER PROGRAMMING USING C

Paper : PGD-1102

Time : 3 Hours] **[Max. Marks : 60**

Note :– Attempt *five* questions in all, including Question No. **9** in Section E, which is compulsory and taking *one* each from Section A to Section D.

Section–A

1. (a) What is a flowchart ? How does it help in problem solving on computers ? Draw a flowchart to find the total count of numbers between 20 and 500 such that the number is divisible by 5 but not divisible by 7.

(b) Name and explain various types of operators in 'C' with examples and the hierarchy in which these are evaluated ? 6,6

2. (a) State one similarity and one difference between while and do while loop with 'C' code examples. Explain the utility of break and continue statements in these two loops.

(b) What do you mean by pre-processor directives in 'C' ? Briefly explain *three* types of pre-processor directives. 6,6

Section–B

3. (a) Define an array in 'C'. What are one-dimensional and two-dimensional arrays ? Explain with example.

(b) Write a 'C' program using an array to find and print the average of 'N' numbers entered by the user. 6,6

4. (a) What is a pointer in 'C' ? Describe various types of arithmetic operations that can be performed on pointer(s). Give examples.

(b) Write a 'C' function, 'swap', that will allow someone using it to pass two integers, and have their values swapped. For example : if the input to the function is $\{x = 17, y = 23\}$, after the function is run the values will be interchanged : $\{x = 23, y = 17\}$. 6,6

Section–C

5. (a) Compare and contrast the *struct* and the *union* as it is defined in C. Explain the difference between the "->" and "." symbols as used to access members of structures.

   (b) What is a string in 'C' ? Name and explain various built-in string functions in 'C', by taking appropriate examples. 6,6

6. Explain the following in the context of 'C' with examples :

   (a) Array of structures

   (b) Array of strings 6,6

Section–D

7. (a) Explain various file opening modes in 'C' and their purpose.

   (b) Differentiate between formatted and unformatted I/O functions in 'C' programming. Give *two* examples of each. 6,6

8. Explain the purpose of the following 'C' file handling functions with suitable example and syntax :

   (a) fopen()

   (b) fprintf()

   (c) fscanf() 4,4,4

Section–E

(Compulsory Question)

9. (a) What is an algorithm ? What are its features ?

   (b) What is meant by storage classes in 'C' ?

   (c) Explain various data types supported by 'C'.

   (d) What do you mean by recursion ? Explain with an example.

   (e) Explain the use of *strcat()* string function in 'C' with an example.

   (f) Differentiate between gets() and puts() functions in 'C'. 6×2=12