USN ☐☐☐☐☐☐☐☐☐☐ **17PCD13/23**

First/Second Semester B.E. Degree Examination, Feb./Mar. 2022
Programming in C and Data Structures

Time: 3 hrs.   Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

1 a. What is Pseudocode? Write a Pseudocode to find the area of a circle. **(10 Marks)**
   b. What is variable? Explain how to declare and initialize a variable. **(05 Marks)**
   c. What is an operator? Explain different relations operators with example. **(05 Marks)**

OR

2 a. What is an Algorithm? Write an algorithm to compute the area of rectangle. **(10 Marks)**
   b. Explain the formatted Input/Output functions with its syntax and example. **(10 Marks)**

Module-2

3 a. What are the different forms of if-standard? Explain any two with syntax, flow chart and example. **(12 Marks)**
   b. Write a C-program to find the sum of digits of a given integer number. **(08 Marks)**

OR

4 a. Explain switch statement with its syntax, flow chart and example. **(08 Marks)**
   b. Explain the difference between while and do-while loops. **(06 Marks)**
   c. Write the difference between break and continue statements. **(06 Marks)**

Module-3

5 a. What is an ARRAY? Explain the different ways of initializing an one dimensional array with an example. **(10 Marks)**
   b. What is a function? Write a functional program to find the sum of two numbers. **(10 Marks)**

OR

6 a. With an example program explain different parameter passing techniques to a function. **(10 Marks)**
   b. What is a string? Explain any five string handling functions? **(10 Marks)**

Module-4

7 a. What is structure? Write a program using structure to read the employee details such as employee number, name and salary of each employee and display total salary of all the employees. **(12 Marks)**
   b. Explain any four file handling functions. **(08 Marks)**

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OR

8 a. Explain with an example program how to pass structure to a function. **(08 Marks)**

b. Explain structure with in a structure with an example. **(05 Marks)**

c. What is a file? Explain different modes of file with an example. **(07 Marks)**

Module-5

9 a. What is a pointer? Explain how to declare and initialize a pointer variable. **(08 Marks)**

b. What is dynamic memory allocation? Explain the different dynamic memory allocation function. **(08 Marks)**

c. What is stack? Explain different operations performed on stack. **(04 Marks)**

OR

10 a. What is a Queue? Explain different operations performed on Queue. **(04 Marks)**

b. Explain the difference between static memory allocation and dynamic memory allocation. **(08 Marks)**

c. What is a macro? Write a program to find the square of a number using macros. **(08 Marks)**

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