CAMBRIDGE INSTITUTE OF TECHNOLOGY

K.R. PURAM, BENGALURU-560036

Department of Computer Sciences& Engineering

Program B.E. ■ M.Tech. □ Specialization:

Preparatory Question Bank - Odd Semester 2021-22

Sub. Name: Problem Solving Through Programming **Sub.Code**: 21PSP13 **Semester**: I

QUESTIONS

a) **1.** Explain the declaration and initialization of one dimensional (1–D) array with examples.

b) 2. Write a C program to search an element in an array using Binary search.

c) 3. Develop a program to introduce 2D Array manipulation and implement matrix multiplication and ensure the rules of multiplication are checked.

a) 4. Explain the declaration and initialization of one dimensional (2–D) array with examples.

b) 5. Write a C program to sort the elements in an array using bubble sort.

c) 6. Write a C program to explain any three string handling functions.

a) 7. What is function? Explain the elements of user defined function.

b) 8. Explain the categories of Function with a suitable example.

c) 9. Write a C program to illustrate how to pass 1D array as an argument to a function.

a) 10. What is Recursion? Write a C program to compute binomial co-efficient ${}^{n}C_{r}$ using recursion.

b) 11. Explain parameter passing techniques with a suitable example.

c) 12. Write a C program to check a number is a prime or not using function.

a) 13. What is structure? Explain how do we define, declare and initialize a structure.

b) 14. Write a C program to implement structure for reading, writing and computing average marks of n students in a class. Also, display the names of students scoring above and below the average marks for a class of n students.

c) 15. Write a C program to illustrate preprocessor directive and list its categories.

16. What is pointer? Explain how the pointer variable is declared and initialized.

17. Explain nested structure with a suitable example.

18. Explain the declaration and initialization of pointers. Write a c program using pointers to compute sum, mean and standard deviation of all elements stored in an array of n real numbers.

19. Write a C program to sort the elements in an array using selection sort.

20. Write a C program to perform Pascal triangle

21. Write a program to find GCD and LCM of two numbers using concept of function

22. Differentiate between call by value and call by reference with examples

23. Write a C program to check a number is a prime or not using recursion