CAMBRIDGE INSTITUTE OF TECHNOLOGY
K.R. Puram Bengaluru – 36

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Principles of Programming using C – BPOPS203

Semester: 2 **Section: P1, P2, P3**

MODULE- 3 QUESTION BANK

C123.3 Explore user-defined data structures like arrays in implementing solutions to problems like searching and sorting. **(Q: NO 1 to 13)**

C123.5 Design and Develop Solutions to problems using modular programming constructs using functions. **(Q: NO 14 to 32)**

Questions:

1. What is an Array? Explain the declaration and initialization of 1-D array with examples. **(RBT – Level 1)**
2. Explain the declaration and initialization of 2-D array with examples. **(RBT – Level 1)**
3. Explain the declaration and initialization of Multidimensional array with examples. **(RBT – Level 1)**
4. Write a program to insert an element 20 at index 2 in an array of size 10. **(RBT – Level 3)**
5. Write a program to delete an element at index 2 in an array of size 10. **(RBT – Level 3)**
6. Write a program to sort the elements in an array using bubble sort. **(RBT – Level 2)**
7. Write a program to search an element in an array using linear search. **(RBT – Level 2)**
8. Write a program to search an element in an array using binary search. **(RBT – Level 2)**
9. Write a C program to read N integers into an array A and to **(RBT – Level 3)**
   a) Find the sum of odd numbers
   b) Find the sum of even numbers
   c) Find the average of all numbers
   Output the results computed with appropriate headings.
10. Write a C Program to find greatest number from one dimensional array. **(RBT – Level 2)**
11. Write a C Program to find greatest number from two dimensional array. **(RBT – Level 2)**
12. Write a C program to multiply the elements of two matrices. **(RBT – Level 3)**
13. Write a C program to find the transpose of a given matrix. (**RBT – Level 3)**
14. Explain passing arrays to functions. Write a C program to sort the given set of n numbers using bubble sort. Use functions. **(RBT-Level 3)**
15. Explain passing 2D array to functions. Write a C program to find the sum and average of numbers stored in a 2D array. Use functions. **(RBT-Level 3)**

16. What is User defined functions? State its needs. **(RBT-Level 1)**
17. Explain the elements of User defined functions? **(RBT-Level 2)**
18. Explain the categories of User defined functions? **(RBT-Level 2)**
19. Explain the Parameter passing techniques. **(RBT-Level 2)**
20. Give the differences between Parameter passing techniques. **(RBT-Level 2)**
21. Explain Recursion. Write a program to find the factorial of a given positive integer number using Recursion. **(RBT-Level 3)**
22. Explain Recursion. Write a program using recursion to print the Fibonacci series. **(RBT-Level 3)**
23. Write a C program to GCD of 2 numbers using EUCLID'S algorithm. Use functions. **(RBT-Level 3)**
24. Write a C program to find the binomial coefficient. Use Recursion. **(RBT-Level 3)**
25. Write a C program to print all the prime numbers in a given range. Use functions. **(RBT-Level 4)**
26. Write a C program to swap 2 numbers using global variable concept and pass by reference concept. (**RBT- Level 2)**
27. Explain nesting of functions? **(RBT-Level 2)**
28. What is scope of a variable? **(RBT- Level 1)**
29. What is visibility of a variable? **(RBT- Level 1)**
30. What is Longevity or lifetime of a variable? **(RBT- Level 1)**
31. Explain storage classes in C in detail. **(RBT- Level2)**
32. Give the differences between user defined and library function. **(RBT-Level 1)**
33. Add two matrices/add 2 array elements
34. Subtract two matrices/subtract 2 array elements