U.G. 6th Semester Examination - 2022

COMPUTER SCIENCE

[PROGRAMME]

Skill Enhancement Course (SEC)

Course Code : COM.SC-G-SEC-P-604

(R. Programming)

[PRACTICAL]

Full Marks : 40 Time : 4 Hours

Answer any **one** question.

Marks Allotment :

Experiment : 30, Viva voce : 10

1. Write an R program that asks the user for a number n and prints the sum of the numbers from 1 to n.
2. Write an R program to check whether a number is pronic number or not. A pronic number is the product of two consecutive integers, that is, a number in the form n(n+1).
3. Write an R function that returns the largest element in a list.
4. Write an R function that returns the smallest element in a list.

5. Write an R program to multiply two 3×3 matrices checking the condition for matrix multiplication.
6. Write an R program to perform addition and subtraction of two 3×3 matrices.
7. Write an R program to sort an array of integers using bubble sort.
8. Write an R program to sort an array of integers using selection sort.
9. Write an R program to sort an array of integers using insertion sort.
10. Write an R program to check whether a string is palindrome or not.
11. Write an R program to input a string and count number of words.
12. Write an R program to search an element from an array of integers using binary search.
13. Write an R program to search an element from a vector using linear search.
14. Write an R program to find the sum of rows of a 3×3 matrix.
15. Write an R program to find the sum of columns of a 3×3 matrix.

16. Write an R program to find the sum of diagonal elements of a 3×3 matrix.

17. Write an R program to multiply an integer with all the elements of a vector consisting integer values.

18. Write an R program to print the length of all elements of a vector.

19. Check whether a number is Armstrong number or not. A number is said to be Armstrong number if the sum of digits raised to the power of number of digits is equal to the number. For example:

$$371 = 3^3 + 7^3 + 1^3 = 371$$

$$1634 = 1^4 + 6^4 + 3^4 + 4^4 = 1634$$

20. Write an R function to calculate the LCM of two integers.

21. Write an R function to check whether a number is prime number or not.

22. Write an R function to find the mean of an integer vector.

23. Write an R function to count the occurrence(s) of a word in a sentence.

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