

B. Sc. (HONOURS) FOURTH SEMESTER EXAMINATIONS, 2021
RAMANANDA COLLEGE

Subject: Computer Science

Course Code: SH/CSC/401/C-8

Course ID: 41521

Course Title: Analysis and Design of Algorithm (Practical)

Full Marks: 15

Time: 2 Hrs.

The figures in the margin indicate full marks

(Viva = 5, Experiment = 10)

1. Answer *any one* of the following questions: (10)
- a) Write a program in C language to implement Insertion Sort (The program should report the number of comparisons)
 - b) Write a program in C language to implement Merge Sort (The program should report the number of comparisons)
 - c) Write a program in C language to implement Heap Sort (The program should report the number of comparisons)
 - d) Write a program in C language to implement Randomized Quick sort (The program should report the number of comparisons)
 - e) Write a program in C language to implement Radix Sort
 - f) Write a program in C language to determine the LCS of two given sequences
 - g) Write a program in C language to implement Breadth-First Search in a graph
 - h) Write a program in C language to implement Depth-First Search in a graph
 - i) Write a program in C language to determine the minimum spanning tree of a graph
 - j) Write a program in C language to create a Red-Black Tree and perform the following operations on it:
 - i. Insert a node
 - ii. Delete a node