FACULTY OF ENGINEERING, UNIVERSITY OF LUCKNOW

Mid-Term Test - II

B.TECH. SEMESTER - VI, 2023-24

Branch: CSE, CSE-AI

Student's Roll No.....

Subject Code: CS601 Subject Title: Design and Analysis of Algorithm

Time: 1 Hrs. **Full Marks: 20 Note:** Attempt questions from each section as per instructions. The symbols have their usual meaning.

SECTION A

1. ***Attempt all parts of this question. Each part carries 1 mark.*** **(1 x5=5)**

a) Differentiate between Greedy and Dynamic Programming.
b) Write a short note on Binomial Heap.
c) Write down the properties of Red-Black Tree.
d) Mention the names of Shortest path algorithms based on source.
e) Define Convex Hull using an example.

SECTION B

Attempt any THREE questions of the following. Each question carries 5 marks.

(5 x 3=15)

2. Crete B-Tree of order 5 from the following lists of data items: **30, 20, 35, 95, 15, 60, 55, 25, 5, 65, 70, 10, 40, 50, 80, 45.**

3. Solve the following instance using greedy approach: **Knapsack capacity= 25, w= <5, 10, 15, 20> and v= <50, 60, 120, 100>.**

4. Write down Pseudo codes of BELLMAN-FORD algorithms.

5. Find the minimum spanning tree of the following graph using Kruskal's algorithm.