JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- 2024

M.Tech-1 Semester (Data Science)

COURSE CODE(CREDITS): 22M1WCI234 (2) MAX. MARKS: 15

COURSE NAME: Social and Information Network Analysis

COURSE INSTRUCTORS: Seema Rani MAX. TIME: 1 Hour

Note: (a)All questions are compulsory.

(b)Marks are indicated against each question in square brackets.

(c) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems

1. Contrast the concepts of paths, walks, trails, and components within a network framework. Provide illustrative examples. [CO-1] [4M]

2. Define a social network and provide examples of real-life social networks. [CO-1] [2M]

3. Elucidate the distinction between undirected and directed edges within a social network graph. [CO-2] [2M]

4. Define centrality measures as applied in social network analysis. Evaluate the importance of these measures in structures of networks. [CO-2] [2M]

5. In the context of social networks, what is the significance of "Betweenness Centrality"? Consider the following undirected graph: [CO-2] [5M]
Nodes: P, Q, R, S, T, K
Edges: (P-Q), (P-R), (Q-R), (Q-S), (R-S), (R-T), (S-T), (P-K), (R-K)
Calculate Betweenness Centrality of node R and T