JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT
TEST -3 EXAMINATION- 2023
B.Tech. VIII- Semester (CSE/IT)

COURSE CODE(CREDITS): 18B1WCI832   MAX. MARKS: 35

COURSE NAME: Social and Information Network Analysis

COURSE INSTRUCTORS: Kushal Kanwar   MAX. TIME: 2 Hours

Note: All questions are compulsory. Marks are indicated against each question in square brackets.

Q1. Derive expression for stationary probability distribution of a random walk on a network.

[CO-4] [7]

Q2. Define Graph Laplacian and compute it for a line graph of order 5. **[CO-4] [2+5=7]**
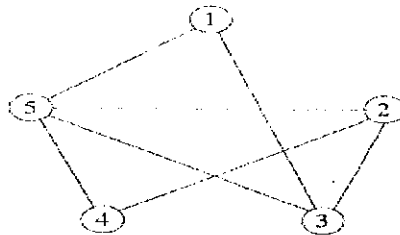
Q3. List differences between independent cascade model and linear threshold model. **[CO-5] [3]**

Q4. Define following problems. (a) Link Prediction (b) Link Completion (c) Link Reliability

[CO-6] [6]

Q5. Fill the following table for the graph given below.   **[CO-6] [4x3=12]**

	(1,2)	(3, 4)	(2, 5)
Jaccard			
Common Neighbors			
Preferential Attachment (Sum)			
Preferential Attachment (Product)			