COURSE CODE(CREDITS): 18B1WCI847(2), 22M1WCI234 (2)

MAX. MARKS: 25

COURSE NAME: Social and Information Network Analysis

COURSE INSTRUCTORS: Seema Rani

MAX. TIME: 1 Hour and 30 minutes

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. What are the different layout algorithms available in Gephi for visualizing networks, and how do they differ in terms of results? [CO-3] [3M]

2. Compute Following for the graph:
Degree Centrality, eccentricity, radius and closeness
Assign weights to the edges: AB: 2, AC: 3, BC: 1, BD: 2, CD: 2

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      A
     / \
    B---C
     \ /
      D
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[CO-2,3] [6M]

3. Compute Betweenness centrality of Directed graph of node A and E
Node: A, B, C, D, E
Edges: A to B, B to A, A to E, A to D, B to C, C to A, C to E, D to E [CO-2] [4M]

4. Write Algorithm for Eigen Vector Centrality measure? Explain Farness and closeness. [CO-2,3] [4M]

5. Find the Eigenvector Centrality of the following of matrix $A = \begin{bmatrix} 1 & 3 \\ 2 & 2 \end{bmatrix}$.
Compute eigenvalue, principle eigenvalue and eigenvectors. [C0-3] [5M]

6. How do you import a dataset into Gephi for network analysis? Describe the steps involved. Write any six file format Gephi support? [CO-3] [4M]