

**PSG COLLEGE OF ARTS & SCIENCE**  
(AUTONOMOUS)

**MSc(SS) DEGREE EXAMINATION DECEMBER 2024**  
(Ninth Semester)

Branch – **SOFTWARE SYSTEMS** (Five years Integrated)

**SOCIAL NETWORK ANALYSIS**

Time: Three Hours

Maximum: 75 Marks

**SECTION-A (10 Marks)**

Answer **ALL** questions

**ALL** questions carry **EQUAL** marks (10 x 1 = 10)

- 1 \_\_\_\_\_ provides a simplified view of network traffic and helps with resource utilization.  
 (i) Network visualization (ii) Continuous visualization  
 (iii) Social visualization (iv) Discrete visualization
- 2 SNA expands \_\_\_\_\_.  
 (i) Social Network Analysis (ii) Social number applications  
 (iii) Social Network android (iv) Secondary Network applications
- 3 Edges are directed and paths can be traversed only along the direction of the edges is known as \_\_\_\_\_.  
 (i) Undirected Graph (ii) Directed Graph  
 (iii) Complete Graph (iv) Bipartite Graph
- 4 \_\_\_\_\_ assumes triads in networks to gravitate toward stable configurations.  
 (i) Structurally instable (ii) Structural information  
 (iii) Structural Balance (iv) Cultural instable
- 5 A field that studies economic phenomena by using network science tools and concepts is known as \_\_\_\_\_.  
 (i) Network Science (ii) Science and Economics  
 (iii) Network Economics (iv) Political economics
- 6 The process of spreading information through a social network is known as \_\_\_\_\_.  
 (i) Information Destruction (ii) Information construction  
 (iii) Intentional distraction (iv) Information Diffusion
- 7 \_\_\_\_\_ is a graph or a network with non-trivial topological features.  
 (i) Simple network (ii) Social network  
 (iii) Strucutral network (iv) complex network
- 8 Network analysis can help investigate non-traditional financial intermediation is known as \_\_\_\_\_.  
 (i) Financial intermediation (ii) Domestic intermediation  
 (iii) Ownership intermediation (iv) Business intermediation
- 9 \_\_\_\_\_ is a network in which one vertex is connected to all other vertices.  
 (i) Directed graph (ii) Simple graph  
 (iii) Complete graph (iv) Multigraph
- 10 \_\_\_\_\_ is a (sub)network consisting of three vertices.  
 (i) Bipartite (ii) Triad  
 (iii) Discrete (iv) Binary

Cont...

**SECTION - B (25 Marks)**

Answer ALL questions

ALL questions carry EQUAL Marks

(5 x 5 = 25)

- 11 a Explain the sources of network data.  
OR  
b Elaborate the basics of Graph theory.
- 12 a Determine the strength on twitter for sentimental analysis.  
OR  
b Illustrate the structural balance on networks.
- 13 a Recommend the connection methods to diffusion of Ideas and Behaviors.  
OR  
b Evaluate the role of basic properties of reproductive number.
- 14 a Discuss the experimental studies of power and exchange in social networks.  
OR  
b Apply the principles in 2 node and 3 node paths.
- 15 a Sketch the working methodology for finding betweenness.  
OR  
b Determine the applications of network link analysis.

**SECTION -C (40 Marks)**

Answer ALL questions

ALL questions carry EQUAL Marks

(5 x 8 = 40)

**Question No. 16 is Compulsory**

- 16 Categorize the tools for network data.
- 17 a Classify the fundamental concepts in Network analysis.  
OR  
b Enumerate the principles of local bridges and weak ties.
- 18 a Elucidate the application of Information diffusion.  
OR  
b Criticize the SIS epidemic model in model for analysis.
- 19 a Determine the power in social networks.  
OR  
b Analyze the solution provided by Nash bargaining model.
- 20 a Categorize the importance of Social network graph.  
OR  
b Justify the spectral methods for mining graph is social media.

Z-Z-Z END