

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

**MCA DEGREE EXAMINATION MAY 2026
(Second Semester)**

Branch - COMPUTER APPLICATIONS

MAJOR ELECTIVE COURSE – I SOCIAL NETWORK ANALYSIS

Time: Three Hours

Maximum: 75 Marks

SECTION-A (10 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** marks

(10 × 1 = 10)

Module No.	Question No.	Question	K Level	CO
1	1	The emergence of the Social Web is mainly characterized by: (i) Static web pages (ii) User-generated content and interaction (iii) Limited communication (iv) Centralized control of data	K1	CO1
	2	Which of the following is a major limitation of the current Web? (i) Too much structured data (ii) Limited number of users (iii) Excessive semantic understanding (iv) Lack of machine-readable data	K2	CO1
2	3	Electronic discussion networks primarily enable: (i) Offline data storage (ii) Hardware networking (iii) Communication and discussion among users (iv) Database design	K1	CO2
	4	Ontology languages (like OWL) are used to: (i) Create user interfaces (ii) Represent and share knowledge on the web (iii) Develop mobile applications (iv) Store multimedia files	K2	CO2
3	5	Which of the following refers to extracting the evolution of a web community? (i) Developing software applications (ii) Designing web pages (iii) Increasing network speed (iv) Studying changes in communities over time using web archives	K1	CO3
	6	Which of the following is used to evaluate communities? (i) Network density and modularity (ii) CPU usage (iii) Disk storage (iv) Screen resolution	K2	CO3
4	7	Privacy in online social networks is concerned with: (i) Increasing advertisements (ii) Improving internet speed (iii) Protecting user data and information (iv) Expanding network size	K1	CO4
	8	Context awareness in social networks means: (i) Ignoring user environment (ii) Understanding user situation and preferences (iii) Limiting user interaction (iv) Reducing data usage	K2	CO4
5	9	Node-link diagrams are used for: (i) Representing relationships between nodes visually (ii) Writing algorithms for relationships between nodes (iii) Managing databases of node links (iv) Compressing data related to nodes	K1	CO5
	10	Co-citation networks are mainly applied in: (i) Social media chatting (ii) File storage systems of network models (iii) Hardware networking (iv) Academic and research analysis	K2	CO5

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SECTION - B (35 Marks)Answer **ALL** questions**ALL** questions carry **EQUAL** Marks (5 × 7 = 35)

Module No.	Question No.	Question	K Level	CO
1	11.a.	Illustrate the emergence of the Social Web with suitable examples and explain its impact on user interaction.	K2	CO1
		(OR)		
	11.b.	Describe the development of the Semantic Web and discuss its importance in modern web applications.		
2	12.a.	Apply the concept of web-based networks to analyze how information flows between users in an online community platform.	K3	CO2
		(OR)		
	12.b.	Apply the concept of electronic discussion networks to explain how blogs and online communities facilitate knowledge sharing in a real-world scenario.		
3	13.a.	Analyze the process of extracting the evolution of web communities from web archives and discuss the challenges involved.	K4	CO3
		(OR)		
	13.b.	Compare and analyze different methods used for community detection in social networks with suitable examples.		
4	14.a.	Evaluate the effectiveness of techniques used for predicting human behavior in social communities, and justify their impact on user experience.	K5	CO4
		(OR)		
	14.b.	Assess the importance of privacy mechanisms in online social networks and evaluate how they balance data usage and user protection.		
5	15.a.	Assess the role of centrality and clustering measures in analyzing social networks and justify their importance in real-world applications.	K5	CO5
		(OR)		
	15.b.	Evaluate the advantages and limitations of matrix representation versus node-link diagrams in visualizing large-scale social networks.		

SECTION - C (30 Marks)Answer **ANY THREE** questions**ALL** questions carry **EQUAL** Marks (3 × 10 = 30)

Module No.	Question No.	Question	K Level	CO
1	16	Using a suitable example, apply the principles of the Social Web to explain how user-generated content and interaction enhance web platforms.	K3	CO1
2	17	Apply ontological representation to model social individuals and their relationships in a social network with a suitable example.	K3	CO2
3	18	Examine the concept of social network infrastructure and analyze how it influences the formation and detection of communities in web-based networks.	K4	CO3
4	19	Critically evaluate the various types of attacks in social networks and propose suitable countermeasures to enhance security and trust.	K5	CO4
5	20	Develop a social network analysis application for a real-world scenario (such as community welfare or collaboration networks), incorporating appropriate graph measures and visualization techniques.	K6	CO5

Z-Z-Z

END