



Paper id: 251004

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**BTECH**  
**(SEM VI) THEORY EXAMINATION 2024-25**  
**SOCIAL MEDIA ANALYTICS AND DATA ANALYSIS**

**TIME: 3 HRS****M.MARKS: 70****Note:** Attempt all Sections. In case of any missing data; choose suitably.**SECTION A****1. Attempt all questions in brief.****02 x 7 = 14**

Q no.	Question	CO	Level
a.	Define Social Media Analytics (SMA) and explain its primary objective.	1	K1
b.	What is an adjacency matrix, and how is it used to represent a graph?	2	K2
c.	With help of an example prove the importance of equivalence in network structures?	3	K3
d.	What is the concept of "structural holes" in social network theory and how does it influence network connectivity?	4	K2
e.	What is Influence Maximization in social networks, and why is it important for viral marketing strategies?	5	K2
f.	Compare between Small and Large organizations in terms of Social Media Analytics (SMA) application.	1	K2
g.	Define the concept of "distance" in a graph and explain its significance in graph theory.	2	K1

**SECTION B****2. Attempt any three of the following:****07 x 3 = 21**

a.	Discuss the role and significance of Social Media Analytics in both small and large organizations. How do the needs and strategies differ across different scales?	1	K2
b.	Describe random graphs and network evolution. What are some key models used to represent random graph generation and how does the network evolve over time?	2	K1
c.	Describe the concept of citation networks and explain their role in academic research. How do citation networks evolve, and what are their characteristics in terms of connectivity and structure?	3	K1
d.	Evaluate the use of Google Analytics for analyzing website performance. Discuss its key implementation technologies, limitations, and privacy concerns. How does Google Website Optimizer enhance the performance analysis of a website?	4	K4
e.	Explain the concept of Collective Classification in network data. How does it differ from traditional classification methods, and what are its applications in social network analysis?	5	K3

**SECTION C****3. Attempt any one part of the following:****07 x 1 = 07**

a.	Explain the different types of social networks (e.g., user-generated content, affiliation) and discuss how each can be used for marketing and business analysis. Provide examples from popular social media platforms.	1	K2
b.	Describe the basics of Web Search Engines and Digital Advertising. How do these technologies interact with Social Media to enhance business	1	K1



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M.MARKS: 70

	models and marketing strategies?		
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**4. Attempt any one part of the following: 07 x 1 = 07**

a.	Discuss the process and significance of Breadth-First Search (BFS) in graph traversal. How can BFS be used to determine connectivity in a graph?	2	K2
b.	Explain the concept of link analysis in network datasets. How can nodes, ties, and influencers be analyzed to understand the structure of a social or communication network?	2	K1

**5. Attempt any one part of the following: 07 x 1 = 07**

a.	Explain the concept of clustering in networks. How do clustering coefficients help in understanding network structures? Provide real-life examples of clustering in social or biological networks.	3	K2
b.	Discuss the process of snowball sampling and its application in network studies. How does it compare to random walks in network sampling?	3	K3

**6. Attempt any one part of the following: 07 x 1 = 07**

a.	Discuss the key differences between predictive and descriptive modeling in the context of social networks. Provide examples of each and explain their significance in understanding social behaviors.	4	K2
b.	Explain the concept of structural balance in social networks. How does it apply to understanding relationships within a network? Discuss how structural balance can be useful in identifying community dynamics or conflicts.	4	K1

**7. Attempt any one part of the following: 07 x 1 = 07**

a.	Describe the process of A/B testing in online advertising. How can it be used to optimize user experience and improve conversion rates? Discuss the challenges and limitations of A/B testing in a real-world context.	5	K2
b.	Discuss the role of Natural Language Processing (NLP) techniques in micro-text analysis on social media. How do NLP methods help in understanding trends, identifying social influencers, and analyzing opinion spread in social networks?	5	K1