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**NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA**

(An Autonomous Institute Affiliated to AKTU, Lucknow)

**B.Tech**

**SEM: VI - THEORY EXAMINATION (2024- 2025)**

**Subject: Social Media Analytics**

**Time: 3 Hours**

**Max. Marks: 100**

**General Instructions:**

**IMP:** Verify that you have received the question paper with the correct course, code, branch etc.

1. This Question paper comprises of **three Sections -A, B, & C**. It consists of Multiple Choice Questions (MCQ's) & Subjective type questions.
2. Maximum marks for each question are indicated on right -hand side of each question.
3. Illustrate your answers with neat sketches wherever necessary.
4. Assume suitable data if necessary.
5. Preferably, write the answers in sequential order.
6. No sheet should be left blank. Any written material after a blank sheet will not be evaluated/checked.

**SECTION-A**

20

1. Attempt all parts:-

- 1-a. The primary objective of semantic analysis is?(CO1,K1) 1
- (a) Identifying the syntactic structure of sentences
  - (b) Extracting named entities from text data
  - (c) Understanding the meaning and context of words and phrases
  - (d) Analyzing the sentiment expressed in text data
- 1-b. The purpose of sentiment classification in sentiment analysis is....(CO1,K1) 1
- (a) Identifying and removing irrelevant words from text data
  - (b) Assigning sentiment labels (e.g., positive, negative, neutral) to text data
  - (c) Extracting features from text data
  - (d) Calculating the frequency of words in a document
- 1-c. Out of the following techniques, technique commonly used in web structure mining is\_\_(CO2,K1) 1
- (a) Clustering
  - (b) Link analysis
  - (c) Natural language processing
  - (d) Association rule mining
- 1-d. The process by which a search engine collects and stores information about web pages\_\_(CO2,K1) 1
- (a) Crawling

- (b) Indexing
  - (c) Ranking
  - (d) Query processing
- 1-e. The step that involves the use of algorithms to uncover patterns and insights from social media data is...(CO3,K2) 1
- (a) Data Collection
  - (b) Data Preprocessing
  - (c) Data Analysis
  - (d) Data Visualization
- 1-f. Connections between individuals based on their interactions and relationships is represented by type of social graph known as\_\_(CO3,K2) 1
- (a) Bipartite graph
  - (b) Directed graph
  - (c) Weighted graph
  - (d) Undirected graph
- 1-g. The purpose of N-gram frequency count in text processing is(CO4,K1) 1
- (a) To identify the most frequently occurring words in a text
  - (b) To identify the grammatical structure of a sentence
  - (c) To identify the sentiment of a text
  - (d) To identify the frequency of occurrence of sequences of N words in a text
- 1-h. The process of obtaining the root word from the given word is known as....(CO4,K1) 1
- (a) Stemming
  - (b) Lemmatization
  - (c) Stop words
  - (d) Tokenization
- 1-i. Which of the following techniques is commonly used to identify influencers in social media analytics.(CO5,K2) 1
- (a) Content Clustering
  - (b) Trend Analysis
  - (c) Network Analysis
  - (d) Keyword Extraction
- 1-j. Downward trend is known as...(CO5,K1) 1
- (a) Bull market
  - (b) Bear market
  - (c) Range bound
  - (d) None of the above

2. Attempt all parts:-

2.a.	Discuss Feature Vector Representation(CO1,K1)	2
2.b.	Define Web Analytics.(CO2,K1)	2
2.c.	Define Recommendation in social media.(CO3,K1)	2
2.d.	Describe semantic topic tagging.(CO4,K1)	2
2.e.	Why is trend important?(CO5,K2)	2

## **SECTION-B**

30

3. Answer any five of the following:-

3-a.	Explain Sentiment Classification.(CO1,K1)	6
3-b.	Describe Opinion Summarization with various examples.(CO1,K2)	6
3-c.	Explain Web Structure Mining .(CO2,K1)	6
3-d.	Explain challenges and principles guiding ethical scraping practices.(CO2,K3)	6
3.e.	Explain Key Concepts of Information Diffusion in social media.(CO3,K2)	6
3.f.	Define Text Processing with examples.(CO4,K2)	6
3.g.	Differentiate between web analytics and social media analytics.(CO5,K3)	6

## **SECTION-C**

50

4. Answer any one of the following:-

4-a.	Explain how TF-IDF calculates the importance of a term in a document corpus, considering both the term frequency within a document and its rarity across the corpus. Illustrate with examples(CO1,K3)	10
4-b.	Describe in detail the effectiveness of existing spam detection approaches in mitigating the spread of opinion spam and preserving the integrity of online discourse.(CO1,K3)	10

5. Answer any one of the following:-

5-a.	Describe extracting meaningful knowledge or insights from data using machine learning techniques in detail .(CO2,K2)	10
5-b.	Describe the Importance of Query Optimization and all the Factors Influencing Query Performance in detail .(CO2,K3)	10

6. Answer any one of the following:-

6-a.	Elaborate Connections, Distributions and Segmentation in terms of Social Networks Measures.(CO3,K3)	10
6-b.	Elaborate User Profiling, Content Analysis, Collaborative Filtering and Content-Based Filtering as Key Components of Recommendation in social media.(CO3,K3)	10

7. Answer any one of the following:-

7-a.	Explain Machine-Learned Classification, and how is it different from other machine learning tasks, such as regression and clustering.(CO4,K2)	10
7-b.	Explain some common techniques for semantic topic tagging, and how do they differ from each other.(CO4,K2)	10

8. Answer any one of the following:-

- 8-a. Explain the uses of trend analysis in surveys. Explain few advantages of analyzing trends in survey data.(CO5,K3) 10
- 8-b. Explain the term trend analysis in social media. Explain five social media trends.(CO5,K2) 10

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