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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 (2025 - 2026)

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:-

- | | | |
|-------|---|---|
| (1.1) | Comparative sentence mining identifies:(CO1,K2) | 1 |
| | (a) Sentiment polarity | |
| | (b) Relations between features or products | |
| | (c) Stop words | |
| | (d) Speech signals | |
| (1.2) | Process that breaks text into smaller units like words:(CO1,K1) | 1 |
| | (a) Stemming | |
| | (b) Tokenization | |
| | (c) Topic clustering | |
| | (d) Social Diffusion | |
| (1.3) | Term that is used to describe the process of determining the relevance of a web page to a users search query is:(CO2,K1) | 1 |
| | (a) Crawling | |
| | (b) Indexing | |
| | (c) Ranking | |
| | (d) Query processing | |
| (1.4) | In an inverted index, data structure commonly used to efficiently store the mapping between terms and documents is:(CO2,K1) | 1 |
| | (a) Linked list | |
| | (b) Hash table | |
| | (c) Binary tree | |
| | (d) Heap | |
| (1.5) | The term describing the tendency to share information aligned with personal beliefs is (CO3,K2) | 1 |

- (a) Confirmation bias
 - (b) Cognitive dissonance
 - (c) Social comparison
 - (d) Self-perception theory
- (1.6) The option that is NOT a valid example of a social graph in social media:(CO3,K2) 1
- (a) A network of followers and their connections on Twitter
 - (b) A visualization of the number of likes and comments on a Facebook post
 - (c) A map of the geographic locations of a brand's Instagram followers
 - (d) A chart showing the top keywords used in a company & LinkedIn posts
- (1.7) POS in NLP refers to:(CO4,K1) 1
- (a) Point of Speech
 - (b) Part of Sentence
 - (c) Part of Speech
 - (d) Point of Syntax
- (1.8) Bag of Words uses:(CO4,K1) 1
- (a) Document matrix
 - (b) Token frequency
 - (c) Word presence
 - (d) All
- (1.9) Downward trend is known as:(CO5,K1) 1
- (a) Bull market
 - (b) Bear market
 - (c) Range bound
 - (d) None of the above
- (1.10) The term adopted for updates by Twitter users is:(CO5,K1) 1
- (a) Toots
 - (b) Tweets
 - (c) Post
 - (d) Twinks

2. Attempt all parts:-

- (2.1) Mention two applications of text clustering.(CO1,K1) 2
- (2.2) Define process of Web Mining.(CO2,K2) 2
- (2.3) List the essential parts of a social graph.(CO3,K1) 2
- (2.4) Illustrate the significance of user awareness in preventing cybercrimes.(CO4,K2) 2
- (2.5) List two pros and cons of trend analysis.(CO5,K1) 2

SECTION-B

30

Answer any one of the following:-

- (3.1) Describe challenges in implementing Named Entity Recognition in informal text.(CO1,K2) 6
- (3.2) Describe the applications of topic modeling in customer feedback 6

analysis.(CO1,K2)

Answer any one of the following:-

(3.3) Explain Interaction, Latent and Following Graphs.(CO2,K1) 6

(3.4) Explain challenges faced while Scraping .(CO2,K3) 6

Answer any one of the following:-

(3.5) State benefits of social media recommendations.(CO3,K1) 6

(3.6) Describe how recommendations are generated in social media.(CO3,K2) 6

Answer any one of the following:-

(3.7) Apply TF-IDF on a short document of your choice and calculate weights for at least 5 terms.(CO4,K2) 6

(3.8) Analyze the impact of tokenization errors in downstream summarization tasks.(CO4,K3) 6

Answer any one of the following:-

(3.9) Explain five trends in text analytics.(CO5,K2) 6

(3.10) Explain few key areas where we can use social media analytics.(CO5,K2) 6

SECTION-C 50

4. Answer any one of the following:-

(4.1) Explain how N-gram models work. Discuss their advantages and limitations.(CO1,K2) 10

(4.2) Develop a framework for Opinion Summarization from a set of product reviews. How would you handle conflicting or sarcastic opinions?(CO1,K4) 10

5. Answer any one of the following:-

(5.1) Discuss the significance and role of web analytics in digital environments.(CO2,K2) 10

(5.2) Describe extracting meaningful knowledge or insights from data using machine learning techniques in detail .(CO2,K4) 10

6. Answer any one of the following:-

(6.1) Describe the effect of homophily on misinformation or rumor spread, and list mitigation strategies.(CO3,K2) 10

(6.2) Describe how social networks are used to study disease spread and public health interventions.(CO3,K3) 10

7. Answer any one of the following:-

(7.1) Compare and contrast extractive and abstractive summarization with suitable examples.(CO4,K3) 10

(7.2) Discuss the importance of N-gram frequency count and phrase mining in extracting useful information from text.(CO4,K4) 10

8. Answer any one of the following:-

(8.1) Discuss three categories of trends. Explain the role of trend analysis in Finance.(CO5,K2) 10

(8.2) Explain the term trend analysis in social media. Explain five social media trends.(CO5,K2) 10