

Duration: 3 hrs

[Max Marks: 80]

- N.B. : (1) Question No 1 is Compulsory.
(2) Attempt any three questions out of the remaining five.
(3) All questions carry equal marks.
(4) Assume suitable data, if required and state it clearly.

- 1 Attempt any **FOUR** [20]
- a What is opinion mining? List the challenges of opinion mining? [5]
 - b What are the types of spamming techniques? Explain any two techniques in detail. [5]
 - c Compare Hidden Markovian Models (HMM) with Conditional Random Fields (CRF). [5]
 - d Explain N-gram modeling and its applications. [5]
 - e What are the challenges of social media mining? [5]
- 2 a Explain with block diagram Named Entity Recognition application. [10]
- b Discuss any two Distance-based Clustering Algorithms. [10]
- 3 a What is Latent Semantic Indexing? What are the benefits of Latent Semantic Indexing? [10]
- b Explain the working of opinion spam detection application [10]
- 4 a Write a short note on K-NN classifier. [10]
- b Explain different data sources and the web usage mining process in detail. [10]
- 5 a Explain feature selection techniques for text document classification. [10]
- b What are the different types of social media graphs? Explain recommendations using social context in detail. [10]
- 6 a Explain the working of web search engine. [10]
- b Explain the supervised techniques of sentiment classification. [10]
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