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B.E. (A.I. & D.S.)

INFORMATION RETRIEVAL

(2019 Pattern) (Semester - VII) (Elective - IV) (417524 B)

Time : 2½ Hours]   *[Max. Marks : 70*

Instructions to the candidates:

1) *Attempt Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8.*
2) *Neat diagrams must be drawn wherever necessary.*
3) *Assume suitable data if necessary*

Q1) a) Define and explain Probabilistic Retrieval.   **[4]**

b) Define the following with respect to Information Retrieval: **[6]**

i) Vector Space Model

ii) Term Frequency

iii) Inverse Document Frequency

c) What is the binary independent retrieval model?   **[6]**

OR

Q2) a) List the problems associated with n-gram. Explain how these problems are handled.   **[6]**

b) List and explain the challenges in Natural language processing.   **[4]**

c) Explain with suitable example different levels of NLP.   **[6]**

Q3) a) What is the difference between clustering and classification? Can clustering be used for classification purposes?   **[6]**

b) What are different types of clustering algorithm? Explain any one of them.   **[6]**

c) Explain in detail about naïve Bayes algorithm and its application in text classification.   **[6]**

OR

Q4) a) Write partitioning algorithm for clustering.   **[10]**

b) Solve Agglomerative hierarchical clustering for single link with example.**[8]**

Q5) a) Discuss the factors that influence a webpages PageRank score. Discuss the challenges involve in web search engine. **[8]**

b) What is page ranking? Calculate page rank of following web pages. Assume damping factor 0.7. **[10]**

OR

Q6) a) Define Python library is used for web crawling? **[6]**
b) What are the main challenges posed by Web? **[6]**
c) Explain the components of focused web crawlers? **[6]**

Q7) a) Outline the steps to build a recommender system with an example. **[10]**

b) What are the four phases of recommender system? **[8]**

OR

Q8) a) Mulitimedia Information Retrieval. **[8]**

b) What are the different evaluation metric for Recommender system. **[10]**

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