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18CS743

Seventh Semester B.E. Degree Examination, Dec.2023/Jan.2024
Natural Language Processing

Time: 3 hrs.
Max. Marks: 100

Note: *Answer any FIVE full questions, choosing ONE full question from each module.*

Module-1

1 a. What is NLP? Explain the challenges of NLP. **(08 Marks)**
   b. Explain different levels of language processing. **(08 Marks)**
   c. Differentiate between the rationalist and empiricist approaches to NLP. **(04 Marks)**

OR

2 a. Explain n-gram model. How to handle data sparseness problem in n-gram model. **(10 Marks)**
   b. Represent the following sentence in GB (S-structure and d-structure) **(06 Marks)**
   c. With example, explain the important features of Indian Languages. **(04 Marks)**

Module-2

3 a. What is Morphology? Explain two step morphological parser. **(06 Marks)**
   b. Write and explain minimum edit distance algorithm. Compute minimum edit distance between tutor and tumour. **(10 Marks)**
   c. What is POS (Part of Speech) tagging? List POS tagging methods. **(04 Marks)**

OR

4 a. Discuss the disadvantages of the logic top-down parser with the help of an appropriate example. **(10 Marks)**
   b. Write a note on :
      i) CFG (Context-Free Grammar) for natural language
      ii) Lexicalization **(10 Marks)**

Module-3

5 a. Explain the shortest path hypothisis with example. **(10 Marks)**
   b. Explain how to capture relation pattern with a string Kernel. **(10 Marks)**

OR

6 a. With diagram explain learning framework architecture. **(10 Marks)**
   b. Explain the strategies used in active learning approach. **(10 Marks)**

Module-4

7 a. Explain with neat diagram evolutionary nodel for KDT (Knowledge Discovery from Text) **(10 Marks)**
   b. Define :
      i)   Cohesion
      ii) Interestingness
      iii) Coherence
      iv) Coverage
      v)   Plausibility of origin. **(10 Marks)**

OR

8	a.	Explain SVM learning method in sequential model estimation.	**(10 Marks)**
	b.	Write a note on various approaches to analyzing texts.	**(10 Marks)**

Module-5

9 a. What are the benefits of eliminating stop words? Give examples in which stop word elimination may be harmful. **(06 Marks)**

b. What is IR (information system)? Explain design features of IR with neat diagram. **(10 Marks)**

c. State and explain Zipf's law. **(04 Marks)**

OR

10 Write a short note on :
i) POS tagger
ii) WORDNET
iii) FRAMENET
iv) STEMMERS **(20 Marks)**

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