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Sri Adichunchanagiri Shikshana Trust (R)

SJB INSTITUTE OF TECHNOLOGY

QUESTION BANK

Subject Name: Natural Language Processing

Subject Code: 18CS743

By

Faculty Name: Chetan R

Designation: Assistant Professor

Semester: 7

Department of Information Science & Engineering

Aca. Year: Odd Sem /2021-22

VTU Question Bank
17CS741 Natural Language Processing

MODULE – 1

1a. Illustrate with suitable examples the different levels on NLP. **(08 Marks) (Jan-Feb-2021)**.

1b.. List and explain the challenges of Natural Language Processing. **(06 Marks) (Jan-Feb-2021).**

1c. Explain the role of transformational rules in transformational grammar with the help of an example. **(06 marks) (Jan-Feb-2021).**

2a. Explain Statistical Language Model and find the probability of the test sentences P (they play in a big garden) in the following training set using bi-gram model

<s> There is a big garden

Children play in the garden

They play inside beautiful garden </s> **(06 Marks) (Jan-Feb-2021)**

2b. Explain applications of Natural Language Processing. **(06 Marks) (Jan-Feb-2021)**

2c. List the problems associated with n-gram model. Explain how these problems are handled. **(08 Marks) (Jan-Feb-2021).**

MODULE – 2

3a. Explain the working of two-step morphological parser. Write a simple Finite State Transducer (FST) for mapping English nouns. (08 Marks) **(Jan-Feb-2021).**

3b. Illustrate parts of speech Tagging and explain different categories ofPOS tagging. **(06 Marks) (Jan-Feb-2021).**

3c. Explain the Minimum Edit Distance algorithm and compute the minimum edit distance between EXECUTION and INTENTION. **(06 Marks) (Jan-Feb-2021).**

4a. Design CYK algorithm Tabulated the sequence of states created by CYK algorithm while parsing "A pilot likes fling planes". Consider the following simplified grammar in CNF

S→ NP VP	NN→ Pilot	VBG→flying
NP →DT NN	NNS→planes	
NP → JJ NNS	JJ → flying	
VP → VBG	DT → a	
VP → VBZ NP	VBZ → likes	(**08 Marks) (Jan-Feb-2021)**

4b. Explain top-down parsing and bottom-up parsing with an example. **(08 Marks) (Jan-Feb-2021).**

4c. List out the disadvantages of Probabilistic Context Free Grammar (PCFG). **(04 Marks) (Jan-Feb-2021).**

MODULE – 3

5a. Explain the four patterns used to extract relationship between two entries with an example for each. **(08 Marks) (Jan-Feb-2021).**

5b. Explain a dependency path Kernel for Relation Extraction. **(08 Marks) (Jan-Feb-2021).**

5c. Discuss the knowledge roles for below sentences with the same domain concepts.

i) The calculated insulating resistance values lay in the safe operating area.

ii) Compared to the last examination lower values for the insulating resistance were ascertained due to dirtiness at the surface. **(04 Marks) (Jan-Feb-2021).**

6a. With a neat diagram explain the architecture used in the task of learning to annotate cases with knowledge Roles. **(10 Marks) (Jan-Feb-2021).**

6b. Explain Functional overview of Infact system with a neat diagram. **(10 Marks) (Jan-Feb-2021).**

MODULE – 4

7a. Explain the functioning of Word Matching Feedback Systems. **(08 Marks) (Jan-Feb-2021).**

7b. Discuss iSTART system and their modules. **(08 Marks) (Jan-Feb-2021).**

7c. Illsutrate Topic Models ™ Feedback system. **(04 Marks) (Jan-Feb-2021).**

8a. Define:

i) Cohesion

ii) Coh-Metrix

iii) Latent Semantic Analysis. **(10 Marks) (Jan-Feb-2021).**

8b. Write a note on various approaches to analyzing texts. **(10 Marks) (Jan-Feb-2021).**

MODULE – 5

9a. Explain design features of information retrieval systems, with a neat diagram. **(10 Marks) (Jan-Feb-2021).**

9b. Define term weighting. Consider a document represented by the 3 terms {tornado, swirl, wind} with the raw tf 4, 1 and 1 respectively. In a collection of 100, documents 15 documents contain the term tornado, 20 contains swirl and 10 contains wind. Find the idf and term weight of the 3 terms. **(06 Marks) (Jan-Feb-2021).**

9c. Explain the benefits of eliminating stop words. Give examples in which stop words elimination may be harmful. **(04 Marks) (Jan-Feb-2021).**

10a. List different IR models. Explain classical Information Retrieval models. **(10 Marks) (Jan-Feb-2021).**

10b. Explain Wordnet and list the applications of Wordnet. **(10 Marks) (Jan-Feb-2021).**