CBCS SCHEME

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15CS741

Seventh Semester B.E. Degree Examination, Aug./Sept. 2020
Natural Language Processing

Time: 3 hrs. Max. Marks: 80

Note: **1.** ***Answer any FIVE full questions, choosing ONE full question from each module.***
2. ***Use appropriate design wherever required to explain.***

Module-1

1 a. Illustrate with suitable examples, the different levels of the natural language processing . **(08 Marks)**

b. Classify the following sentences and check for semantic, correctness, syntactically correctness and pragmatic correctness. The sentence uttered by person is car is too cold. The following are the response to this sentence:
(i) The heater is on.
(ii) The tyre is brand new.
(iii) The window is closed. **(08 Marks)**

OR

2 a. Differentiate between semantic level and pragmatic level of processing. Give suitable examples for each level. **(08 Marks)**

b. Construct the parse tree for the following sentences:
(i) Sue hit John.
(ii) They are cooking Sambar.
Also give top-down approach of grammar for the above sentences. **(08 Marks)**

Module-2

3 a. Explain different types of single error misspellings and the cares for it. **(08 Marks)**

b. Give the equation for minimum edit distance algorithm and explain the same. Apply the algorithm on wordlength of 7 by showing the transition from "intention" to "execution". **(08 Marks)**

OR

4 a. Compare the probabilistic parsing with that of statistical parsing. **(08 Marks)**

b. Differentiate between FST and FSA for an input. Provide examples for the same. **(08 Marks)**

Module-3

5 a. Construct a dependency graph for the sentences given below (ACE) :
(i) Protesters, Ceized several pumping stations, holding 127 shell workers hostage.
(ii) Troops recently have raided churches warning ministers to stop Preaching.
Give the categories of word-word dependencies. Also give the shortest path representation of relations. **(12 Marks)**

b. What is domain knowledge? How is it important in information extraction applications? **(04 Marks)**

OR

6 a. Give the equation of kernel extraction for finding common features between x and y. How is K(x, y) computed for location relationship for the sentence given below:

S_1 = his actions in Bombay

S_2 = his arrival in Delhi. **(08 Marks)**

b. With the help of diagram, explain the learning frame work architecture. **(08 Marks)**

Module-4

7 a. Explain latent semantic analysis (LSA) feedback systems. **(08 Marks)**

b. What is data preparation? Give the processes involved in abstraction over the input text. **(08 Marks)**

OR

8 a. Give the characterstics of Coh-matrix. Provide suitable examples to rate high and low cohesion. How is this different from text identification? **(08 Marks)**

b. Elicit salient features of semantically guided text mining. **(08 Marks)**

Module-5

9 a. Explain PoS tagger in details? Provide suitable examples for PoS tagger. **(08 Marks)**

b. Give the salient features of FrameNet Corpus. Provide details of how it is used in sematic labeling and analysis. **(08 Marks)**

OR

10 a. Present the design aspects of information retrieval systems. Use diagram wherever required. **(08 Marks)**

b. How stemmer process is applied on corpus like FrameNet? Give the details of word in FrameNet. **(08 Marks)**

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