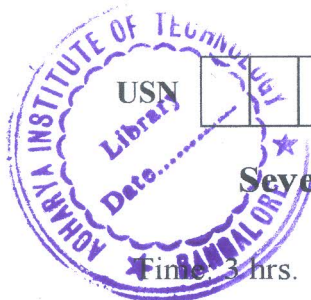


CBCS SCHEME

15CS741



Seventh Semester B.E. Degree Examination, July/August 2021 Natural Language Processing

Time: 3 hrs.

Max. Marks: 80

Note: Answer any FIVE full questions.

- 1 a. Classify the following sentences as,
 - (i) Semantically correct or not.
 - (ii) Syntactically correct or not.
 - (iii) Pragmatically correct or not.
 - A. The heater is on.
 - B. The tires are brand new.
 - C. Two many windows eat the stew. (06 Marks)
- b. For any language, state process involved in Natural Language Understanding (NLU) and Natural Language Generation (NLG). (10 Marks)
- 2 a. Illustrate with suitable examples, the different levels of the natural language processing. (10 Marks)
- b. Differentiate between semantic level and program level of processing. Provide suitable examples wherever required. (06 Marks)
- 3 a. List and explain the different types of typo-error in spelling error detection method. (08 Marks)
- b. Apply minimum edit distance algorithm on word "intention". Mention various steps in the algorithm. (08 Marks)
- 4 a. Differentiate between FST and FSA for a given input. Provide suitable examples. (08 Marks)
- b. Explain probabilistic parsing and compare the same with statistical parsing method. (08 Marks)
- 5 a. What is frame semantics? Illustrate the process of semantic role labelling. (06 Marks)
- b. Construct the dependency graph for the sentence given below:
"Protester seized several pumping stations holding 127 shell workers hostage."
Mention the categories of word-word dependencies. Indicate the shortest path representation of relations. (10 Marks)
- 6 a. With the help of diagram, present the functional processing of parsing in InFact systems. (08 Marks)
- b. Show how relational extraction is performed on kernels subsequencing for word/sentence. (08 Marks)
- 7 a. Explain briefly the working of Latent Semantic Analysis (LSA) feedback systems. (08 Marks)
- b. Elaborately discuss the steps involved in data preparation for automatic document separation. (08 Marks)
- 8 a. Explain different types of approaches of analyzing texts. Identify challenges, merits, demerits in each approach. Also highest and optimal and suitable approach for analyzing text in Resume/Biodata. (10 Marks)
- b. Compare the Genetic Algorithm approach over the classical optimization algorithms. Give its suitability in text mining and language analysis. (06 Marks)
- 9 a. List and explain the design features of informal retrieval system. (06 Marks)
- b. What is Information Retrieval? Give the characteristics features of IRS. (10 Marks)
- 10 a. Apply the Information Retrieval model for search engine. Provide the model design good in search systems. (10 Marks)
- b. List the advantages and disadvantages of various lexical resources. (06 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.