**Code No: 155CK** **R18**

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**
**B. Tech III Year I Semester Examinations, August - 2022**
**NATURAL LANGUAGE PROCESSING**
**(Computer Science and Engineering)**

**Time: 3 hours** **Max. Marks: 75**

**Answer any five questions**
**All questions carry equal marks**
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1.a) Discuss the structure and components of words.
b) Explain any one Morphological model. [7+8]

2.a) Discuss the Complexity of the approaches in NLP.
b) Explain the Performance of various methods in NLP. [7+8]

3.a) Explain about data driven approach to syntax.
b) Give an overview of parsing algorithms. [8+7]

4.a) Give an overview of various approach for syntactic representation.
b) What are the issues in multilingual syntactic analysis? [8+7]

5.a) Given there is a train on platform 6.
Its Destination is Hyderabad.
There is another train is in platform 7.
Its destination is Delhi.
Write Procedure for Anaphora Resolution.
b) Explain Word Sense Disambiguation. [8+7]

6.a) Explain Morphological structure.
b) What kind of softwares are available for semantics in NLP. [7+8]

7.a) Explain Predicate Argument Structure.
b) How many kinds of predicates are used to handle a basic statement? Give example. [7+8]

8.a) How Parameter Estimation supports Language Modelling?
b) Differentiate Bilingual and Cross lingual Language Models. [7+8]

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**Code No: 155CK** **R18**

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**
**B. Tech III Year I Semester Examinations, February - 2022**
**NATURAL LANGUAGE PROCESSING**
**(Computer Science and Engineering)**

**Time: 3 hours** **Max. Marks: 75**

**Answer any five questions**
**All questions carry equal marks**
**- - -**



1.a) Explain in detail about some early NLP Systems.
b) List and explain the issues and challenges of NLP System in detail. [8+7]

2.a) Discuss in detail about Complexity approaches of NLP Systems.
b) What are the measures used to find the performances of the NLP Methods. [8+7]

3.a) Consider the following training set and implement Bi-gram model to calculate the probability of given test sentence.
Training Set: I am a human
I am not a robot
I I live in Hyderabad
Test Sentence: I I am not
b) What are the Limitations in syntax parsing? [8+7]

4.a) Give all possible parse trees for the sentence, Stolen painting found by tree.
b) Explain any one Parsing Algorithm with the help of an example. [8+7]

5.a) State the types of references used in discourse analysis.
b) Describe in detail about word sense disambiguation with an example. [8+7]

6.a) Give example to explain the concept of predicate argument structure.
b) What are System paradigms in predicates? Explain. [8+7]

7.a) Explain Anaphora Resolution with the help of an example.
b) What kind of predicate structure are used for language modelling? [8+7]

8.a) Discuss in detail about the concept of Cohesion Structure.
b) List out popular lexical resources used in the processing of natural language text. [8+7]

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**Code No: 155CK** **R18**

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**
**B. Tech III Year I Semester Examinations, January/February - 2023**
**NATURAL LANGUAGE PROCESSING**
**(Computer Science and Engineering)**

**Time: 3 Hours** **Max. Marks: 75**

**Note:** i) Question paper consists of Part A, Part B.
ii) Part A is compulsory, which carries 25 marks. In Part A, Answer all questions.
iii) In Part B, Answer any one question from each unit. Each question carries 10 marks and may have a, b as sub questions.

**PART – A**

**(25 Marks)**

| | | |
|---|---|---|
| 1.a) | Define allomorphs. | [2] |
| b) | What is a lexeme? List its categories. | [3] |
| c) | What is the use of Treebank? | [2] |
| d) | Give an example of a phrase structure tree. | [3] |
| e) | What is the objective of semantic parsing? | [2] |
| f) | How to identify an event in text? | [3] |
| g) | List verbal predicates that demand two object arguments. | [2] |
| h) | Suggest the requirements for a meaning representation system. | [3] |
| i) | What is meant by cohesion in NLP? | [2] |
| j) | What is an n-Gram model? | [3] |

**PART – B**

**(50 Marks)**

2. Describe the following morphological models with illustrations:
a) Dictionary lookup
b) Unification based morphology. [5+5]

**OR**

3. Make a comparison of generative sequence classification methods and discriminative local classification methods for finding structure of the documents. [10]

4. Elaborate the tokenization and parsing challenges in multilingual content. [10]

**OR**

5.a) Demonstrate shift-reduce parsing algorithm.
b) Explain the use of probabilistic context free grammars for ambiguity resolution in parsing. [5+5]

6. Describe the methods for word sense disambiguation and the software support for it. [10]

**OR**

7. Illustrate the methods for resolving entity and event in natural language. [10]

8. Explain the usage of PropBank in semantic parsing. [10]

**OR**

9. Provide a detailed description of meaning representation and its need. [10]

10. Make a comparison of syntax based language model and factored language model. [10]

**OR**

11.a) With an example, discuss demonstrative reference.

b) What is meant by anaphora resolution? Explain the methods used for it. [5+5]

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**Code No: 155CK** **R18**

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**
**B. Tech III Year I Semester Examinations, March - 2021**
**NATURAL LANGUAGE PROCESSING**
**(Computer Science and Engineering)**

**Time: 3 Hours** **Max. Marks: 75**

**Answer any five questions**
**All questions carry equal marks**
**- - -**

1.a) List and explain the challenges of morphological models.
b) Discuss the importance and goals of Natural Language Processing. [7+8]

2.a) Elaborate the Models for Ambiguity Resolution in Parsing.
b) With the help of a neat diagram, explain the Representation of Syntactic Structure. [8+7]

3. Explain the Word Sense Systems in detail. [15]

4.a) Difference between predicate and Predicator.
b) Write a short note on Meaning Representation Systems. [8+7]

5.a) Elaborate the Multilingual and Cross-lingual Language Modeling.
b) Illustrate the Discourse Cohesion and Structure. [8+7]

6. Explain the performance of approaches in Structure of Documents. [15]

7. Describe the Cohesion and Reference Resolution. [15]

8. Explain the following:
a) Semantic Parsing with Execution
b) Language Model Adaptation [7+8]

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**Code No: 155CK** **R18**

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**
**B. Tech III Year I Semester Examinations, September - 2021**
**NATURAL LANGUAGE PROCESSING**
**(Computer Science and Engineering)**

**Time: 3 hours** **Max. Marks: 75**

**Answer any five questions**
**All questions carry equal marks**
**----**

1.a) List the applications and challenges in NLP.
b) Explain any one Morphological model. [7+8]

2.a) Discuss about challenging issues of Morphological models.
b) Differentiate between surface and deep structure in NLP with suitable examples. [7+8]

3.a) Explain various types of parsers in NLP.
b) Discuss multilingual issues in detail. [8+7]

4.a) Given Grammar
S→ AB | BB
A→ CC | AB | a
B→ BB | CA | b
C→ BA | AA | b
Word w= aabb. Apply Top Down Parsing test, the word can be generated or not.
b) Explain Tree Banks and its role in parsing. [8+7]

5.a) State the types of references in discourse.
b) Explain about Homonymy and Polysemy with suitable examples. [8+7]

6.a) How Morphological structure helps to Language Modelling?
b) How to handle semantics? [8+7]

7.a) Give example for Predicate Argument Structure.
b) What are System Paradigms in predicates? [7+8]

8.a) Consider the following training set and implement Bi-gram model to calculate the probability of given Test sentence.
Training set: She said thank you.
She said bye as she walked through the door.
She went to San Diego
Test sentence: She thanked and walk through the door
b) Give some examples for early NLP systems. [8+7]

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