

SPPU-BE-COMP-CONTENT – KSKA Git

Total No. of Questions : 4]

SEAT No. :

PA-10172

[Total No. of Pages : 2

[6010]-42

B.E. (Computer Engineering) (Insem)

NATURAL LANGUAGE PROCESSING

(2019 Pattern) (Semester - VIII) (410252(A)) (Elective - V)

Time : 1 Hour]

[Max. Marks : 30

Instructions to the candidates:

- 1) Answer Q.1 or Q.2, Q.3 or Q.4.
- 2) Neat diagrams must be drawn wherever necessary.
- 3) Figures to the right side indicate full marks.
- 4) Assume suitable data, if necessary.

Q1) a) What do you mean by part-of-speech Tagging? What is the need of this task in NLP. [5]

b) Differentiate between natural languages and programming languages. [5]

c) Explain Tokenization with it's different types. [5]

OR

Q2) a) What is Natural Language Processing(NLP)? Discuss various stages involved in NLP process with suitable example. [8]

b) Discuss the challenges of Natural Language Processing. [7]

Q3) a) Derive a top-down, depth-first, left-to-right parse tree for the given sentence: [7]

The angry bear chased the frightened little squirrel

Use the following grammar rules to create the parse tree:

$S \rightarrow NP VP$	$Det \rightarrow the$
$NP \rightarrow Det Nom$	$Adj \rightarrow little \mid angry \mid frightened$
$VP \rightarrow V NP$	$N \rightarrow squirrel \mid bear$
$Nom \rightarrow Adj Nom \mid N$	$V \rightarrow chased$

P.T.O.

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- b) Explain Derivational and Inflectional morphology in detail with suitable example. [8]

OR

- Q4)** a) What is Probabilistic context-free grammars? State the benefits of probabilistic parsing. [7]
- b) Explain with suitable examples following relationship between word meanings, 1. Homonymy 2. Polysemy 3. Synonymy 4. Hyponymy [8]

