R20 Regulation *Subject code: 3P5GC*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A+' Grade)

B.Tech V Semester Supplementary Examinations, April 2026

NATURAL LANGUAGE PROCESSING

(CSE(AI&ML))

Maximum Marks: 70 Date: 20.04.2026 Duration: 3 hours

Note: **1.This question paper contains two parts A and B.**
2. Part A is compulsory which carries 20 marks. Answer all questions in Part A.
3. Part B consists of 5 Units. Answer any one full question from each unit.
4. Each question carries 10 marks and may have a, b, c, d as sub questions.

Part-A

All the following questions carry equal marks (10X2M=20 Marks)		Marks	CO	BTL
1	What is the role of Morphology?	2M	1	L1
2	What is the importance of NLP?	2M	1	L1
3	Differentiate Dependency Parsing and Phrase structure tree.	2M	2	L1
4	Define Parsing Algorithm explain with example	2M	2	L1
5	What is mean by Chat Parsing?	2M	3	L1
6	Describe Frame based Knowledge Representation.	2M	3	L1
7	Explain Stemming with example Program?	2M	4	L1
8	Explain Lemmatization with example Program?	2M	4	L1
9	What is Chunking explain its types?	2M	5	L1
10	Write about Maximum-Likelihood Estimation and Smoothing?	2M	5	L1

Part-B

Answer All the following questions. (5X10M=50Marks)		Marks	CO	BTL
11	Explain Generative Model and Classifier with examples.	10M	1	L2
	OR			
12	a) What are the Issues and Challenge of NLP? b) Explain about Ambiguity and its types.	5M 5M	1	L2
13	Given the CFG grammar Perform syntactic analysis of the following sentence using any of the parsing method. "Book the flight through Denver".	10M	2	L2
	OR			
14	Describe Probabilistic Context Free Grammar for given sentence. "Book the flight through the Houston"	10M	2	L2

	$S \rightarrow NP\ VP$ [.80] | $Det \rightarrow that$ [.05] | the [.80] | a [.15] $S \rightarrow Aux\ NP\ VP$ [.15] | $Noun \rightarrow book$ [.10] $S \rightarrow VP$ [.05] | $Noun \rightarrow flights$ [.50] $NP \rightarrow Det\ Nom$ [.20] | $Noun \rightarrow meal$ [.40] $NP \rightarrow Proper\text{-}Noun$ [.35] | $Verb \rightarrow book$ [.30] $NP \rightarrow Nom$ [.05] | $Verb \rightarrow include$ [.30] $NP \rightarrow Pronoun$ [.40] | $Verb \rightarrow want$ [.40] $Nom \rightarrow Noun$ [.75] | $Aux \rightarrow can$ [.40] $Nom \rightarrow Noun\ Noun$ [.20] | $Aux \rightarrow does$ [.30] $Nom \rightarrow Proper\text{-}Noun\ Nom$ [.05] | $Aux \rightarrow do$ [.30] $VP \rightarrow Verb$ [.55] | $Proper\text{-}Noun \rightarrow TWA$ [.40] $VP \rightarrow Verb\ NP$ [.40] | $Proper\text{-}Noun \rightarrow Denver$ [.40] $VP \rightarrow Verb\ NP\ NP$ [.05] | $Pronoun \rightarrow you$ [.40] | I [.60]			
15	Explain in briefly Word Sense Disambiguation (WSD).	10M	3	L2
	OR			
16	a) Explain Supervised and Un Supervised Learning. b) Explain in briefly Semi- supervised Learning.	5M 5M	3	L2
17	a) Explain about Meaning Representation in Semantic Parsing. b) What is Relationship Extraction and give example.	5M 5M	4	L2
	OR			
18	a) Explain Prop Bank with Example parsing Tree. b) Write about System Paradigms.	5M 5M	4	L2
19	Discuss Maximum-Likelihood Estimation and Smoothing.	10M	5	L2
	OR			
20	a) What is Large-Scale Language Model? b) Explain Chunking and its types.	5M 5M	5	L2