R22 Regulation *Subject code: 4P8FA*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech VIII Semester Regular Examinations, May 2026

NATURAL LANGUAGE PROCESSING

(IT)

Maximum Marks: 60 Date: 08.05.2026 Duration: 3 hours

Note: **1.This question paper contains two parts A and B.**
2. Part A is compulsory which carries 10 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 (10X1M=10 Marks)		Marks	CO	BTL
1.a)	Analyze how prefixes and suffixes modify meaning with examples.	1	1	2
b)	Define morpheme.	1	1	1
c)	What is syntactic parsing?	1	2	1
d)	Define context-free grammar (CFG).	1	2	1
e)	What is semantic parsing?	1	3	1
f)	Define ambiguity in NLP.	1	3	1
g)	What is logical form representation?	1	4	1
h)	Define semantic interpretation.	1	4	1
i)	What is language model evaluation?	1	5	1
j)	For sentence "AI is powerful", write trigrams.	1	5	2

Part-B

Answer All the following questions. (5X10M=50Marks)		Marks	CO	BTL
2	a) Analyze the structure of words using morphological models. b) Evaluate challenges in processing morphologically rich languages.	5 5	1	4
	OR			
3	a) Examine techniques used for document structure analysis. b) Compare their effectiveness using examples.	5 5	1	4
4	a) Explain parsing natural language sentences using CFG. b) Construct a parse tree for: "She reads a book"	5 5	2	2
	OR			
5	a) Describe different parsing algorithms used in NLP. b) Explain their working with examples.	5 5	2	2
6	a) Explain models used for ambiguity resolution in parsing. b) Discuss multilingual challenges in NLP.	5 5	3	2
	OR			
7	a) Explain semantic parsing paradigms. b) Analyze the sentence: "The light is bright" using semantic interpretation.	5 5	3	2

8	a) Explain predicate logic representation in NLP. b) Convert: "John eats an apple" into predicate form.	5 5	4	3
	OR			
9	a) Discuss different meaning representation techniques. b) Compare syntax vs semantic parsing.	5 5	4	3
10	a) Explain language model adaptation techniques. b) Given corpus: "AI is useful. AI is growing." Compute bigram probabilities.	5 5	5	2
	OR			
11	a) Explain class-based and variable length language models. b) Discuss cross-lingual language modeling.	5 5	5	2