

GYANMANJARI INNOVATIVE UNIVERSITY

GYANMANJARI INSTITUTE OF TECHNOLOGY

M. Tech.-End Semester Examination (ESE)- Summer-2026

Enrollment No.: _

Subject Code: METAI12514

Subject Name: Natural Language Processing

Time: 10:30 AM to 01:30 PM

Date: 21-05-2026

Semester: 02

Total Marks: 100

Instructions:

1. Question No. 1 is compulsory.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

		Marks
Q.1	(a) Explain the levels of NLP (syntax, semantics, pragmatics) with suitable examples.	10
	(b) Define N-gram models and explain unsmoothed word counting with an example.	10
Q.2	(a) Evaluate methods for retrieval of information using semantic analysis.	10
	OR	
	(a) Analyze the role of network modelling tools in grammar representation.	10
	(b) Explain First Order Predicate Logic in NLP with examples.	10
	OR	
	(b) Explain text coherence and discourse structure with examples.	10
Q.3	(a) Explain sentence-level constructions and early parsing techniques.	10
	(b) Explain Context-Free Grammar (CFG) with rules and parse trees for English sentences.	10
	OR	
Q.3	(a) Discuss the ambiguity problem in NLP and how machine learning helps to resolve it.	10
	(b) Analyze top-down parsing and probabilistic parsing techniques with examples.	10
Q.4	(a) Apply parsing strategies to generate a parse tree for a given sentence. "GYANMANJARI"	10
	(b) Evaluate machine translation approaches: transfer and interlingua.	10
	OR	
Q.4	(a) Apply concepts of discourse planning and surface realization.	10
	(b) Apply NLP techniques to design a basic chatbot system architecture.	10
Q.5	(a) Explain chatbots and sentiment analysis with real-world examples.	10
	(b) Evaluate feature structure grammars and grammars without context.	10
	OR	
Q.5	(a) Design a probabilistic grammar model for ambiguity resolution.	10
	(b) Apply bigram and trigram models to compute sentence probability.	10