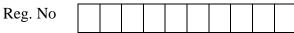# GIET UNIVERSITY, GUNUPUR – 765022

B. Tech (Seventh Semester – Regular) Examinations, November – 2022
BPECS7014 / BPECT7014 – Natural Language Processing
(CSE & CST)

Time: 3 hrs   Maximum: 70 Marks

Answer ALL Questions
The figures in the right hand margin indicate marks.

PART – A: (Multiple Choice Questions)   **(1 x 10 = 10 Marks)**

Q.1. Answer *ALL* questions

		[CO#]	[PO#]

a. The following areas where NLP can be useful — **1 1**
  (i) Automatic Text Summarization (ii) Information Retrieval
  (iii) Automatic Question-Answering Systems (iv) All of the Above

b. Machine Translation is that converts — **2 1**
  (i) Human language to machine language (ii) One human language to another
  (iii) Any human language to English (iv) Machine language to human language

c. Morphological Segmentation — **2 1**
  (i) Is an extension of propositional logic (ii) Does Discourse Analysis
  (iii) Separate words into individual morphemes and identify the class of the morphemes (iv) None of the mentioned

d. In linguistic morphology, _____ is the process for reducing inflected words to their root form. — **2 1**
  (i) Stemming (ii) Rooting
  (iii) Text-Proofing (iv) Both (i) & (ii)

e. What is the work of POS Tagging? — **3 1**
  (i) POS tagging helps to find out the various sentence. (ii) POS tagging helps to find out the various nouns, adverbs, verbs, and map them in a sentence.
  (iii) name, time, location, date, and other entities present in text. (iv) none of the above

f. The words 'there' and 'their' causes which of the following type of ambiguity? — **4 1**
  (i) Syntactic (ii) Semantic
  (iii) Phonological (iv) Pragmatic

g. In the sentence, "They bought a blue house", the underlined part is an example of _____. — **2 1**
  (i) Noun phrase (ii) Verb phrase
  (iii) Prepositional phrase (iv) Adverbial phrase

h. What type of ambiguity exists in the word sequence "Time flies"? — **3 1**
  (i) Syntactic (ii) Semantic
  (iii) Phonological (iv) Anaphoric

i. What are the input and output of an NLP system? — **1 1**
  (i) Speech and noise (ii) Speech and Written Text
  (iii) Noise and Written Text (iv) Noise and value

j. ----------is the study of internal structure of word. — **2 1**
  (i) Morphological Processing (ii) Syntax Processing
  (iii) Parser (iv) Semantic Processing

PART – B: (Short Answer Questions)   **(2 x 10 = 20 Marks)**

Q.2. Answer *ALL* questions

		[CO#]	[PO#]
a.	What is NLP?	1	1
b.	List some common components of NLP.	1	1
c.	What is pragmatic analysis in NLP?	2	1
d.	Describe working principle of n-gram in NLP.	2	1
e.	Differentiate d-structure and s-structure of GB.	2	2
f.	Briefly explain f-structure of LFG.	2	1
g.	Explain the difference between Karta and Agent.	3	1
h.	What do you mean by real world error?	3	1
i.	Explain Part of speech tagging.	2	1
j.	Describe Rule based tagger.	3	1

PART – C: (Long Answer Questions)   **(10 x 4 = 40 Marks)**

Answer *ALL* questions

		Marks	[CO#]	[PO#]
3. a.	Describe different applications of NLP.	5	1	1
b.	Make a list of the challenges faced by NLP.	5	1	1
	(OR)			
c.	Describe n-gram model and it's features.	5	2	2
d.	Write a note on the following: a. X theory b. Theta Theory	5	2	1
4. a.	Describe different categories of Language Models used in NLP.	5	2	1
b.	Explain the Paninian grammar and it's working culture.	5	3	1
	(OR)			
c.	Write the c-structure and f-structure for the sentence "She saw Stars" with the help of the following CFG rules S -> NP VP VP -> V {NP} {NP} PP* {S'} PP -> P NP NP -> Det N {PP} S' -> Comp S	5	3	2
d.	What is morphological Parsing? Explain 2 level morphological model with an example.	5	3	1
5. a.	Define a finite automaton that accepts the following language (aa)*(bb)*	5	2	2
b.	Distinguish between non word and real word error.	5	2	2
	(OR)			
c.	Compute the minimum edit distance between *paecflu* and *peacful*	5	3	3
d.	Explain different algorithms that can be used for spelling correction.	5	2	1
6. a.	Differentiate between Rule based tagger and Stochastic tagger?	5	2	1
b.	Discuss the disadvantages of the basic top-down parser with the help of an appropriate example	5	3	2
	(OR)			
c.	What does lexicalized grammar mean? How can lexicalization have achieved?	5	3	1
d.	How top-down parsing is different from bottom-up parsing?	5	2	2

--- End of Paper ---