

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VII (NEW) EXAMINATION – WINTER 2022****Subject Code:3170723****Date:16-01-2023****Subject Name:Natural Language Processing****Time:10:30 AM TO 01:00 PM****Total Marks:70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed

MARKS

- Q.1** (a) What is NLP? Why NLP is difficult? **03**
 (b) Explain applications of NLP in brief. **04**
 (c) Explain a method to build NLP pipeline with suitable example. **07**
- Q.2** (a) Explain perplexity with suitable example. **03**
 (b) Explain bigram model in brief. **04**
 (c) Describe Deleted Interpolation smoothing with suitable example. **07**
- OR**
- (c) Describe Part-of-Speech Tagging with suitable example. **07**
- Q.3** (a) Define following terms: gloss, synset, supersense **03**
 (b) Explain IS-A hierarchy. **04**
 (c) Describe the Lesk Algorithm in detail. **07**
- OR**
- Q.3** (a) What is one sense per discourse? **03**
 (b) Explain structured polysemy. **04**
 (c) Describe feature based WSD with suitable example. **07**
- Q.4** (a) Explain sentiment mining in brief. **03**
 (b) Analyze any application of NLP using the concept of Cross-Lingual IR. **04**
 (c) Write a detailed note on Semisupervised Relation Extraction via Bootstrapping. **07**
- OR**
- Q.4** (a) Explain macroaveraging and microaveraging in brief. **03**
 (b) Create a confusion matrix for visualizing how well a binary classification system performs against gold standard labels. **04**
 (c) Write a detailed note on Relation Extraction via Supervised Learning. **07**
- Q.5** (a) Explain problems of machine translation. **03**
 (b) Explain encode-decoder model of machine translation. **04**
 (c) Explain neural machine translation with suitable example. **07**
- OR**
- Q.5** (a) Explain the dimensions used to evaluate Machine Translation. **03**
 (b) Explain knowledge based MT System in brief. **04**
 (c) Write a detailed note on SMT. **07**
