

315329

25226

3 Hours / 70 Marks

Seat No. 

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- Instructions* – (1) All Questions are *Compulsory*.  
(2) Answer each next main Question on a new page.  
(3) Illustrate your answers with neat sketches wherever necessary.  
(4) Figures to the right indicate full marks.  
(5) Assume suitable data, if necessary.  
(6) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

**Marks**

1. Attempt any FIVE of the following : 10
- a) Define ambiguity in natural Language processing.
  - b) Define tokenization.
  - c) State top-down and bottom-up parsing.
  - d) Give any two disadvantages of TF-IDF.
  - e) List any two uses of Regular Expression in NLP.
  - f) State cosine similarity.
  - g) Give any two applications of NLP.
2. Attempt any THREE of the following : 12
- a) Describe the text-corpora.
  - b) Compare Stemming and Lemmatization. (Any four points)
  - c) Discuss the structure and components of parse tree with example.
  - d) Explain transfer learning in NLP.

P.T.O.

3. Attempt any THREE of the following : 12
- a) Explain Byte-pair encoding with example.
  - b) Describe the contextual embeddings to solve problem of polysemy.
  - c) Draw and explain the architecture of transformer.
  - d) Describe n-gram generation from a sentence.
4. Attempt any THREE of the following : 12
- a) Explain semantic network with suitable example.
  - b) Describe rule-based tokenization using spacy.
  - c) Draw and explain the syntax tree for sentence - "The girl saw the boy with telescope."
  - d) Discuss TF - IDF with example.
  - e) Describr Hugging face dataset with example.
5. Attempt any TWO of the following : 12
- a) Describe all the steps of raw text preprocessing with example.
  - b) Give the working of parser also draw the parse tree for the sentence – "She believes he knows the answer."
  - c) Explain contextual embeddings also give use cases.
6. Attempt any TWO of the following : 12
- a) Describe in detail POS tagging with technique, algorithm and example.
  - b) Implement chunking in python using NLTK.
  - c) Implement sentiment classification application in python.
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