Total No. of Questions : 8]

SEAT No. :

PB-3801

[Total No. of Pages : 2

[6262]-60

T.E. (Artificial Intelligence and Data Science)

NATURAL LANGUAGE PROCESSING

(2019 Pattern) (Semester - II) (317532B) (Elective-II)

Time : 2½ Hours] ***[Max. Marks : 70***

Instructions to the candidates:

1) ***Solve questions Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7or Q.8***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right indicates full marks.***
4) ***Assume Suitable data if necessary.***

Q1) a) Explain Context Free Grammar and Grammar rules For English in detail. **[8]**

b) Write short note based on constituency parsing. **[9]**

i) Ambiguity

ii) Partial Parsing

iii) CCG Parsing

OR

Q2) a) Elaborate dependency relations and dependency formalism of dependency parsing. **[8]**

b) Write short note based on constituency parsing. **[9]**

i) Ambiguity

ii) Span based neural constituency parsing

iii) CKY Parsing

Q3) a) Explain Word senses and relation between various senses. **[8]**

b) Explain lexicon for sentiment-Emotions, sentiment and affect lexicons, Creating Affect Lexicons by Human Labeling with suitable example.**[9]**

OR

P.T.O.

Q4) a) Write down about WordNet and wordsense disambituition in detail. **[8]**

b) Explain lexicon for sentiment-Semi-supervised Induction of Affect Lexicons, Supervised Learning of Word Sentiment, Using Lexicons for Sentiment. Recognition with suitable example. **[9]**

Q5) a) Explain need of Machine Translation (MT) with suitable example. Which are the problems of Machine Translation? **[9]**

b) Write short note on:

i) Knowledge based MT System **[5]**

ii) Encoder-decoder architecture **[4]**

OR

Q6) a) Explain Machine Translation (MT) approaches with suitable example. Describe Direct Machine Translation in detail. **[9]**

b) Write short note on:

i) Statistical Machine Translation (SMT) **[5]**

ii) Neural Machine Translation **[4]**

Q7) a) Elaborate Information retrieval-Vector space Model in detail. **[9]**

b) Write short note on: **[9]**

i) Categorization

ii) Summarization

iii) Sentiment Analysis

OR

Q8) a) Discuss Information Extraction using Sequence Labelling in detail. **[9]**

b) Write short note on: **[9]**

i) Named Entity Recognition.

ii) Analyzing text with NLTK

iii) Chatbot using Dialogflow