BRAINWARE UNIVERSITY

Term End Examination 2023-2024
Programme – MCA-2022
Course Name – Natural Language Processing
Course Code - MCA401A
(Semester IV)

Full Marks : 60 **Time : 2:30 Hours**

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A
(Multiple Choice Type Question) 1 x 15=15

1. *Choose the correct alternative from the following :*

(i) What is Machine Translation?

a) Converts one human language to another
b) Converts human language to machine language
c) Converts any human language to English
d) Converts Machine language to human language

(ii) The study of the construction of words from primitive meaningful units, is lablled as _____.

a) Phonology
b) Shonology
c) Morpheme
d) Morphology

(iii) In NLP, which algorithm decreases the weight for commonly used words and increases the weight for words that are not used very much in a collection of documents?

a) Term Frequency (TF)
b) Word2Vec
c) Latent Dirichlet Allocation (LDA)
d) Inverse Document Frequency (IDF)

(iv) Judge the true statement.

a) Rule based methods are language independent
b) Stochastic methods are language independent
c) It is highly complex task to resolve ambiguities especially at lower levels of NLP
d) Disambiguation task are is more challenging in Resourceful language as compared to Resourceless language

(v) How Morpheme is visualized ?

a) Set of words with grammar
b) Smallest linguistic unit with grammatical function.
c) Set of rules.
d) Smallest sentence with syntax

(vi) Choose the correct root of the stem "replayed".

a) Replay
b) Play
c) Played
d) Replayed

(vii) Select the Python library used to implement natural language processing.

a) NLTK
b) Scrapy
c) Matplotlib
d) Pydot

(viii) Determine the consonants in the given string- "SYZYGEO".

a) S, Z, G
b) Y, E
c) Y, O
d) S, Y, O, Z, G

(ix) The state of the process is described in HMM as _____.

a) Literal
b) Single random variable
c) Single discrete random variable
d) Literal and Single random variable

(x) Polysemy is a Greek word, Distinguish its correct meaning.

a) Many names
b) Many signs
c) Many meanings
d) Many verbs

(xi) "The tour includes three Asian countries." Distinguish the noun phrase.

a) The tour includes
b) three Asian countries
c) Three asian
d) Tour includes

(xii) Interprete the hyponym of car.

a) Scooter
b) Cycle
c) Rickshaw
d) Automobile

(xiii) Distinguish the odd one out from the following.

a) nltk
b) scikit learn
c) SpaCy
d) BERT

(xiv) Decide the process of converting a sentence or paragraph into tokens is interpreted as _____.

a) Stemming
b) Lemmatization
c) Tokenization
d) POS

(xv) Decide which is not unsupervised algorithm.

a) K-means
b) K-medoids
c) SVM
d) DBSCAN

Group-B

(Short Answer Type Questions) 3 x 5=15

2. Explain orthographic rules. (3)
3. Explain ambiguous grammar. (3)
4. State the challenges of NLP. (3)
5. Correlate parsing in the context of NLP. (3)
6. Order the steps involved in parsing. (3)

OR

Appraise how the N-Gram Language Model helps analysis in NLP. (3)

Group-C

(Long Answer Type Questions) 5 x 6=30

7. Illustrate how machines make meaning out of language. (5)
8. Explain different phases in the development of a speech recognition system. (5)
9. Explain some of the common NLP tasks. (5)
10. Summarize Bag of Words (BOW). (5)
11. Discriminate Artificial Intelligence, Machine Learning, and Natural Language Processing. (5)
12. Justify Parsing in the context of NLP. (5)

OR

Justify Parsing in NLP. (5)

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