

University of Mumbai
Examination June 2021

Examinations Commencing from 1st June 2021

Program: Computer Engineering

Curriculum Scheme: Rev2016

Examination: BE Semester VIII

Course Code: DLO0812 and Course Name: NLP

Time: 2 hour

Max. Marks: 80

| Q1. | Choose the correct option for following questions. All the Questions are compulsory and carry equal marks |
|------------|--|
| 1. | Solve the equation according to the sentence “I am planning to visit New Delhi to attend Analytics Vidhya Delhi Hackathon”. A = (# of words with Noun as the part of speech tag) B = (# of words with Verb as the part of speech tag) C = (# of words with frequency count greater than one) What are the correct values of A, B, and C? |
| Option A: | 5, 5, 2 |
| Option B: | 5, 5, 0 |
| Option C: | 7, 5, 1 |
| Option D: | 7, 4, 2 |
| 2. | How many trigrams phrases can be generated from the following sentence, “I love Natural language Processing.” |
| Option A: | 3 |
| Option B: | 2 |
| Option C: | 4 |
| Option D: | 5 |
| 3. | In linguistic morphology _____ is the process for reducing inflected words to their root form. |
| Option A: | Rooting |
| Option B: | Stemming |
| Option C: | Text-Proofing |
| Option D: | lemming |
| 4. | Natural language processing is divided into the two subfields of - |
| Option A: | understanding and generation |
| Option B: | symbolic and numeric |
| Option C: | time and motion |
| Option D: | algorithmic and heuristic |
| 5. | How many Components/stages of NLP are there? |
| Option A: | 5 |

| | |
|-----------|---|
| Option B: | 4 |
| Option C: | 3 |
| Option D: | 2 |
| | |
| 6. | Which of the following is used study of construction of words from primitive meaningful units? |
| Option A: | Phonology |
| Option B: | Morphology |
| Option C: | Morpheme |
| Option D: | Shonology |
| | |
| 7. | In the sentence, “They bought a blue house”, the underlined part(a blue house) is an example of _____ . |
| Option A: | Adverbial phrase |
| Option B: | Noun phrase |
| Option C: | Verb phrase |
| Option D: | Prepositional phrase |
| | |
| 8. | The words “window” and “room” are in a lexical semantic relation |
| Option A: | meronym – holonym |
| Option B: | hypernym – hyponym |
| Option C: | hypernym – meronym |
| Option D: | holonym – hyponym |
| | |
| 9. | computer vs computational is an example of _____ morphology. |
| Option A: | Inflectional |
| Option B: | Derivational |
| Option C: | Cliticization |
| Option D: | Derivable |
| | |
| 10. | Which of the following can be used to implement orthographic rules? |
| Option A: | Finite State Automata (FSA) |
| Option B: | Finite State Transducer (FST) |
| Option C: | Hidden Markov Model (HMM) |
| Option D: | Context Free Grammer(CFG) |
| | |
| 11. | Which is a stochastic sequential model for POS Tagging |
| Option A: | Hidden Markov Model |
| Option B: | Rule based POS Tagging |
| Option C: | ENGTWOLTagging |
| Option D: | Brill Tagger |
| | |
| 12. | Many words have more than one meaning; we have to select the meaning which makes the most sense in context. This can be resolved by |
| Option A: | Fuzzy Logic |
| Option B: | Word Sense Disambiguation |
| Option C: | Shallow Semantic Analysis |
| Option D: | WordNet |
| | |
| 13. | ‘Does Rajdhani train serve lunch?’ Which kind of sentence is this |

| | |
|-----------|--|
| Option A: | Imperative |
| Option B: | Yes/No Questions |
| Option C: | Wh - Questions |
| Option D: | Declarative |
| | |
| 14. | Which is the right way to give semantic attachments for, "CORONA train schedule " |
| Option A: | $NN(a, Schedule) \wedge NN(x, Train) \wedge NN(x, CORONA)$ |
| Option B: | $Isa(a, Schedule) \wedge NN(x, Train) \wedge NN(x, CORONA)$ |
| Option C: | $Isa(a, Schedule) \wedge (x, Train) \wedge NN(x, CORONA)$ |
| Option D: | $\lambda Isa(a, Schedule) \wedge NN(x, Train) \wedge NN(x, CORONA)$ |
| | |
| 15. | Which is not an algorithm to handle Word sense Disambiguation |
| Option A: | Lesk's Algorithm |
| Option B: | Random Walk Algorithm |
| Option C: | Walker's Algorithm |
| Option D: | AI algorithm |
| | |
| 16. | Choose the lexical database/dictionary for the English language, specifically designed for natural language processing. |
| Option A: | WordNet |
| Option B: | Synset |
| Option C: | Skynet |
| Option D: | WordSense |
| | |
| 17. | In the sentence 'John went to Bill's car dealership to check out an Acura Integra. He looked at it for about an hour' which terms can be called as the entity? |
| Option A: | Acura Integra |
| Option B: | Car Dealership |
| Option C: | Car |
| Option D: | John |
| | |
| 18. | _____ introduces entities that are new to the hearer into the discourse contexta. |
| Option A: | Definite reference |
| Option B: | Indefinite reference |
| Option C: | Semi-definite reference |
| Option D: | Infinite reference |
| | |
| 19. | 'Ram is good boy. He plays football'. Here, the term 'he' is referred to as |
| Option A: | Antecedent |
| Option B: | Menorym |
| Option C: | Anaphoric |
| Option D: | Antonym |
| | |
| 20. | Which is not a text summarization application from following |
| Option A: | Chatbot |
| Option B: | Text Compactor |
| Option C: | Summarize Bot |
| Option D: | SMMRY |

descriptive questions

| Q2 (20 Marks Each) | Solve any Four out of Six | 5 marks each |
|-------------------------------------|---|---------------------|
| A | <i>What do you mean by word sense disambiguation (WSD). Explain Dictionary based approach for WSD.</i> | |
| B | <i>Short Note on Sentiment Analysis</i> | |
| C | <i>Explain with suitable example</i> <i>a. Homonymy</i> <i>b. Polysemy</i> <i>c. Antonymy</i> <i>d. Hypernymy</i> <i>e. Meronymy</i> | |
| D | <i>Discuss reference resolution problem in details.</i> | |
| E | <i>What is Natural Language Processing? Discuss with some applications</i> | |
| F | <i>Differentiate between top-down and bottom-up parsing.</i> | |

| Q3 (20 Marks Each) | Solve any Four out of Six | 5 marks each |
|-------------------------------------|--|---------------------|
| A | <i>What is N-Gram Language Model.</i> | |
| B | <i>Discuss what are stages involve in NLP with example.</i> | |
| C | <i>Design a finite state transducer with E-insertion orthographic rule that parses from</i> <i>surface level "foxes" to lexical level "fox+N+PL" using FST.</i> | |
| D | <i>What is Stemming. Write Porter Stemmer Algorithm.</i> | |
| E | <i>Explain Derivational and Inflectional Morphology with suitable example</i> | |
| F | <i>Discuss Various approach of Parts of Speech Tagging</i> | |