

University of Mumbai

Examination 2020 under cluster 4 (Lead College: PCE)

Examinations Commencing from 23rd December 2020 to 6th January 2021 and from 7th January 2021 to 20th January 2021

Program: Computer Engineering

Curriculum Scheme: Rev 2016

Examination: BE Semester: VIII

Course Code: DLO8012 and Course Name: Natural Language Processing

Time: 2 hour

Max. Marks: 80

Q1.	Choose the correct option for following questions. All the Questions are compulsory and carry equal marks
1.	Which of the following is component of NLP?
Option A:	Natural speech recognition
Option B:	Natural language understanding
Option C:	Natural language summarization
Option D:	Natural language code
2.	What is morpheme?
Option A:	Set of words with grammar.
Option B:	Smallest linguistic unit with grammatical function.
Option C:	Set of rules.
Option D:	Smallest sentence with syntax.
3.	Context Free Grammar(CFG) does not consist of _____
Option A:	Non-Terminal
Option B:	Terminal
Option C:	Rules
Option D:	End symbol
4.	The term phonology is deal with _____
Option A:	Interpretation of speech sound
Option B:	study of the way words are built up
Option C:	study of formal relationships between words
Option D:	study of the meaning of words
5.	Parts of speech can be divided into two broad supercategories _____
Option A:	Sub class and child class
Option B:	Sentence class and character class
Option C:	Closed class and open class
Option D:	Parent class and derived class
6.	Which of the following is the example of surface segmentation?
Option A:	Achievability = achievabil + ity
Option B:	Achievability = achiev + ability
Option C:	Achievability = Achieve + able + ity
Option D:	Achievability = achiev + abil + ity

7.	Which of the following is not a stage of NLP?
Option A:	Morphological and lexical analysis
Option B:	Syntax analysis
Option C:	Discourse integration
Option D:	Code analysis
8.	Syntax-driven semantic analysis is based on following,
Option A:	Principle of compositionality
Option B:	Principle of integrity
Option C:	Principle of comparability
Option D:	Principle of tagging
9.	Which of the following is example of ambiguity in natural language?
Option A:	The man eat apple
Option B:	Bird is swimming in pool
Option C:	There was not a single man at the party
Option D:	The chicken dish is ready to eat
10.	What is Word Sense Disambiguation (WSD)?
Option A:	The task of selecting the correct sense for a sentence
Option B:	The task of defining correct meaning
Option C:	The task of arranging correct words in sentence.
Option D:	The task of selecting the correct sense for a word
11.	How given sentence represented using Bigram model? "I want to eat Indian food"
Option A:	{(I, want), (want, to), (to, eat), (eat, Indian),(Indian, food)}
Option B:	{(I), (want, to), (to, eat), (eat, Indian),(Indian, food),(food, I)}
Option C:	{(I, want, to), (want, to, eat), (to, eat, Indian), (eat, Indian, food)}
Option D:	{(I), (want), (to), (eat), (Indian), (food)}
12.	Which of the following is not a Information Retrieval type?
Option A:	Text
Option B:	Image
Option C:	Speech
Option D:	Structured Information
13.	"Would you please turn the volume a little higher?" is a example of
Option A:	Yes-No question
Option B:	Declarative sentence
Option C:	Wh-Subject-question
Option D:	Imperative sentence
14.	The word "Putting" is handle and clean up by which stemming rule? " <i>Putting</i> → <i>Put</i> "
Option A:	{(X) -ing → ε} and {-CC → C}
Option B:	{(X) -eed → -ee} and {-at → -ate}
Option C:	{(X) -ing → -ing}
Option D:	{(X) -C1VC2 → C1VC2e}

15.	Which of the following is not an open class?
Option A:	Noun
Option B:	Preposition
Option C:	Verbs
Option D:	Adverb
16.	Which of the following is HMM tagging?
Option A:	Rule base POS tagging
Option B:	Transformation based tagging
Option C:	Brill tagging
Option D:	Stochastic POS tagging
17.	Which of the following is a correct rule for “Yes-No-Question”?
Option A:	$S \rightarrow NP VP$
Option B:	$S \rightarrow VP$
Option C:	$S \rightarrow Aux NP VP$
Option D:	$S \rightarrow WhWord NP VP$
18.	A natural language expression used to perform reference is called _____
Option A:	Referent
Option B:	Anaphora
Option C:	Context
Option D:	Referring expression
19.	Which of the following is not true about Question-Answer (QA) System?
Option A:	Natural extension of Information Retrieval
Option B:	A QA system receives a query expressed in Natural Language
Option C:	Tries to provide a document containing the answer
Option D:	Provides answer as a fact
20.	Which of the following is not a type of referring expression?
Option A:	Indefinite noun phrases
Option B:	definite noun phrases
Option C:	Inferrables
Option D:	Demonstratives

Q2. (20 Marks)	Solve any Four out of Six 5 marks each
A	Explain stages in NLP
B	Define morphology. Explain types of morphology.
C	<p>Given a mini-corpus of three sentences</p> <p><s> I am Sam </s> <s> Sam I am </s> <s> I do not like green eggs and ham </s></p> <p>Calculate following bigram probabilities from this corpus, $P(I <s>)$, $P(Sam <s>)$, $P(am I)$, $P(Sam am)$, $P(do I)$</p>
D	Explain rule based tagging.
E	Write a short note on Word Sense Disambiguation.

F	What is Named-Entity recognition? Define its types.
---	---

Q3. (20 Marks)	Solve any Four out of Six. 5 marks each
A	What are the challenges of NLP?
B	Explain finite state transducer(FST).
C	Explain agreement and coordination.
D	Explain following Relations among lexemes & their senses, Homonymy, Synonymy, Hyponymy with example
E	What are the five types of referring expression? Explain with example
F	Explain Information retrieval.