

Program: BE Computer Engineering
Curriculum Scheme: Revised 2016
Examination: Final Year Semester VIII
Course Code and Course Name: **DLO8012** and **Natural Language Processing**

Time: 1 hour

Max. Marks: 50

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Q. No.	
1.	Many words have more than one meaning; selecting the sensible meaning in context is done with
a)	Randomization
b)	Shallow semantic analysis
c)	Word Sense Disambiguation
d)	POS tagging
2.	Which statement is true
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
3.	What is a meaning of Morphology?
(a)	The study of word format
(b)	The study of sentence format
(c)	The study of syntax of sentence
(d)	The study of semantics of sentence.
4.	What is morpheme?
(a)	Set of words with grammar.
(b)	Smallest linguistic unit with grammatical function.
(c)	Set of rules.
(d)	Smallest sentence with syntax.
5.	Which of the following is the example of surface segmentation?
(a)	Achievability = achievabil + ity
(b)	Achievability = achiev + ability
(c)	Achievability = Achieve + able + ity
(d)	Achievability = achiev + abil + ity

6.	Which derivational prefixes does not change the category of word to which they are attached?	
	(a)	Re- & -Un
	(b)	-er
	(c)	-ize
	(d)	-ing
7.	Which one of the following is morpheme of the word “unbelievable”?	
	(a)	un
	(b)	unbe
	(c)	evable
	(d)	able
8.	Which of the following is correct example of stem “replayed”?	
	(a)	Replay
	(b)	Play
	(c)	Played
	(d)	Replayed
9.	Which python library use to implement natural language processing?	
	(a)	NLTK
	(b)	Scrapy
	(c)	Matplotlib
	(d)	Pydot
10.	Following are the basic regular expression patterns, which one is incorrect pattern?	
	(a)	Disjunction
	(b)	Caret
	(c)	Ranges
	(d)	Conjunction
11.	“I almost bought an Acura Integra today, but a door had a dent and the engine seems noisy.” This is an example of which type of referring expression	
	(a)	Reflexive
	(b)	Gender Agreement
	(c)	Inferrable
	(d)	Selectional Restriction
12.	Lappin and Leass Algorithm is used for	
	(a)	Coherence Relation
	(b)	Pronoun Resolution

	(c)	Anaphora Resolution
	(d)	Syntax Analysis
13.	Porter Stemmer algorithm use for _____.	
	(a)	Lemmatization
	(b)	Syntax Analysis
	(c)	Stemming
	(d)	Part of speech tagging
14.	Regular expressions are combination of simple units as given in options, select incorrect unit.	
	(a)	Character or string
	(b)	Concatenation
	(c)	Kleen star
	(d)	Conjunction
15.	Which of the following example is the type of free morphemes?	
	(a)	Dog
	(b)	Un-(unhappy)
	(c)	Re-(Reschedule)
	(d)	-y(smiley)
16.	How to compute probability of a sentence or sequence of sentence in N-gram model?	
	(a)	$P(W) = P(W_1, W_2, W_3, \dots, W_n)$
	(b)	$P(W) = P(W_{n+1} W_n - 1)$
	(c)	$P(W) = P(W_n - 1 W_{n+1})$
	(d)	$P(W) = P(W_{n+1} W_n)$
17.	What is significance of caret ^ in regular expression?	
	(a)	If $[ab^ncd]$ means "a or b ^ c and d".
	(b)	If $[^A-Z]$ means all uppercase nothing negated.
	(c)	If caret is first symbol after the open square brace "[" then resulting pattern is negated.
	(d)	If $[^a-b]$ means all lowercase nothing negated.
18.	What is a difference between Finite State Automata (FSA) and Finite State Transducers (FST)?	
	(a)	FSA contain single tape and FST also contain single tape.
	(b)	FSA contain single input tape and FST contain single output tape.
	(c)	FSA contain single input tape and FST contain input: output pair tapes.
	(d)	Both FSA and FST contains output tapes only.
19.	Which of the following is not a primitive operation of a regular expression?	

	(a)	Concatenation
	(b)	Closure
	(c)	Union
	(d)	Projection
20.	Format of words is given in options, select incorrect option.	
	(a)	Books → Book + Noun + Plural
	(b)	Shopping → Shop + Verb + Cont.
	(c)	Cats → Cat + Verb
	(d)	Went→go + Verb + Past
21.	How conditional probability rewrite in language model? $P(\mathbf{B} \mathbf{A}) = P(\mathbf{A}, \mathbf{B}) / P(\mathbf{A})$	
	(a)	$P(A, B) = P(A) P(B A)$
	(b)	$P(A, B) = P(A) P(A B)$
	(c)	$P(A, B) = P(B) P(B A)$
	(d)	$P(A) = P(A) P(B A)$
22.	How given sentence represented using Bigram model? “I want to eat Indian food”	
	(a)	{(I, want), (want, to), (to, eat), (eat, Indian),(Indian, food)}
	(b)	{(I), (want, to), (to, eat), (eat, Indian),(Indian, food),(food, I)}
	(c)	{(I, want, to), (want, to, eat), (to, eat, Indian), (eat, Indian, food)}
	(d)	{(I), (want), (to), (eat), (Indian), (food)}
23.	Which of the following are Anchors in regular expression?	
	(a)	* and +
	(b)	^ and \$
	(c)	? and {}
	(d)	\d and \w
24.	A DFA is a tuple $A = (Q, \Sigma, \delta, q_0, F)$,what does δ indicates?	
	(a)	Finite set of state
	(b)	A finite set of input symbols
	(c)	Transition function
	(d)	A set of final states
25.	Which one of the following is type of spelling errors?	
	(a)	Sentence errors
	(b)	Non-word errors
	(c)	Non-cognitive errors

	(d)	Syntax errors
26.	Mini-Corpus given, <s>I am Sam <s> <s>Sam I am<s> <s> I do not like green eggs and ham<s> What will be bigram probability of P(am I)?	
	(a)	0.67
	(b)	0.33
	(c)	0.5
	(d)	0.25
27.	Which token of the following is lemmatized correctly by the rule given? (X) -sses → -ss (X) -ies → -i (X) -ss → -ss (X) -s → €	
	(a)	Buses
	(b)	Dogs
	(c)	Dog
	(d)	Courses
28.	The word “Putting” is handle and clean up by which stemming rule? “ <i>Putting</i> → <i>Put</i> ”	
	(a)	{(X) -ing → €} and {-CC→ C}
	(b)	{(X) -eed → -ee} and {-at → -ate}
	(c)	{(X) -ing → -ing}
	(d)	{(X) -C1VC2 → C1VC2e}
29.	Which of the following is the example of overstemming?	
	(a)	Univers
	(b)	Universe
	(c)	Universal
	(d)	University
30.	Which of the following is the example of understemming?	
	(a)	Data
	(b)	Date
	(c)	Datum
	(d)	Dat, Datu
31.	Which are the consonants in a given string? “SYZYGEO”	

	(a)	S, Z, G
	(b)	Y, E
	(c)	Y, O
	(d)	S, Y, O, Z, G
32.	Rule for removing suffix will be given in form “(Condition) S1 → S2”, where S1 is suffix. If the condition is “(*d)” then which of the following is correct interpretation?	
	(a)	The stem ends with S.
	(b)	The stem contain vowel.
	(c)	The stem ends with a double consonant (eg. -TT, -SS)
	(d)	The stem ends CVC, where second C is not W, X, or Y
33.	Alice was beginning to get very tired of sitting by her sister on the bank, and of having nothing to do: once or twice she had peeped into the book her sister was reading, but it had no pictures or conversations in it, 'and what is the use of a book,' thought Alice 'without pictures or conversation?' Which among the options is NOT a coreferring expression?	
	(a)	Alice, her
	(b)	Alice, she
	(c)	Book, her
	(d)	Book, it
34.	Which of the following is a example of irregular noun form?	
	a)	Fox
	b)	Dog
	c)	Mouse
	d)	Cat
35.	What is Syntax Analysis?	
	(a)	This only abstracts the dictionary meaning or the real meaning from the given context.
	(b)	This component transfers linear sequences of words into structures. It shows how the words are associated with each other.
	(c)	It deals with the overall communicative and social content and its effect on interpretation. It means abstracting or deriving the meaningful use of language in situations.
	(d)	It focuses about the proper ordering of words which can affect its meaning. This involves analysis of the words in a sentence by following the grammatical structure of the sentence. The words are transformed into the structure to show how the words are related to each other.
36.	Syntactic analysis or parsing may be defined as the process of _____ the _____ of symbols in Natural language conforming to the rules of formal grammar.	
	(a)	Analyzing & Strings

	(b)	Defining & Groups
	(c)	Reducing & Arrays
	(d)	Reviewing & Letters
37.	Following property is of - .These taggers are knowledge-driven	
	(a)	Rule based Tagging
	(b)	Stochastic Tagging
	(c)	Rule based Tagging and Stochastic Tagging
	(d)	Neither Rule based Tagging nor Stochastic Tagging
38.	Following property is of - .This POS tagging is based on the probability of tag occurring	
	(a)	Rule based Tagging
	(b)	Stochastic Tagging
	(c)	Rule based Tagging and Stochastic Tagging
	(d)	Neither Rule based Tagging nor Stochastic Tagging
39.	Where the additional variables does are added in HMM?	
	a)	Temporal model
	b)	Reality model
	c)	Probability model
	d)	In all three models, temporal, reality and probability model
40..	How does the state of the process is described in HMM?	
	a)	Literal
	b)	Single random variable
	c)	Single discrete random variable
	d)	Literal and Single random variable
41.	HMMs are “a statistical Markov model in which the system being modeled is assumed to be a _____ process with _____ states”.	
	a)	Convolution, completed
	b)	Markov, Unobservable
	c)	Analyzing, Categorized
	d)	Complete, Observed
42.	What is the major difference between CRF (Conditional Random Field) and HMM (Hidden Markov Model)?	
	(a)	CRF is Generative whereas HMM is Discriminative model
	(b)	CRF is Discriminative whereas HMM is Generative model
	(c)	Both CRF and HMM are Generative model
	(d)	Both CRF and HMM are Discriminative model

43.	HMM are designed to model the joint distribution $P(H, O)$, where H is the _____ state and O is the _____ state	
	(a)	Hidden, Observed
	(b)	Unobservable, Hidden
	(c)	Classified, Completed
	(d)	Open, Completed
44.	HMM graphs consist of a Hidden Space and Observed Space, where the hidden space consists of the _____ and the observed space is the _____	
	(a)	Input, Categories
	(b)	Values, Variables
	(c)	Labels, Input
	(d)	Variables, Values
45.	HMMs are limited to only _____ states and only take into account the last known _____.	
	(a)	Complete, Value
	(b)	Unobserved, Variable
	(c)	Hidden, Attribute
	(d)	Discrete, State
46.	Maximum Entropy Markov Models use a maximum entropy _____ for _____ and local _____.	
	(a)	Framework, Features, Normalization
	(b)	Rules, Variables, Classification
	(c)	Sets, Values, Distribution
	(d)	Rules, features, classification
47.	In the context of POS tagging, the objective would be to build an HMM to model $P(\text{____} \text{____})$ and Compute the label probabilities given observations using _____ Rule.	
	(a)	Value, Label, Markov
	(b)	Word, Tag, Bayes
	(c)	Attribute, Variable, Bayes
	(d)	Input, Label, Markov
48.	In HMMs, spaces are connected via _____ matrices $\{T, A\}$ to represent the probability of _____ from one state to another following their _____	
	(a)	Transitions, Transitioning, Connections
	(b)	Attribute, Changing, groups
	(c)	Label, moving, sets

	(d)	Attribute, moving, sets
49.	Each connection in HMM represents a _____ over possible options; given our _____, this results in a large search space of the _____ of all words given the tag.	
	(a)	Value, variables, associativity
	(b)	Distribution, tags, probability
	(c)	Variable, Labels, Transitivity
	(d)	Object, groups, associativity
50.	Consider the statement: "Ban on dancing on Governor's desk. " would be interpreted as:	
	(a)	(Ban (on dancing)) (on Governor's desk)
	(b)	(Ban on ((dancing) on Governor's desk)
	(c)	(Ban (on dancing on Governor's desk))
	(d)	(Ban on (dancing) on ((governor's)) desk)
51.	Parts-of-Speech tagging determines _____. 1) part-of-speech for each word dynamically as per meaning of the sentence 2) part-of-speech for each word dynamically as per sentence structure 3) all part-of-speech for a specific word given as input	
	(a)	Only 1 is correct
	(b)	1 and 2 are correct
	(c)	1 and 3 are correct
	(d)	All (1,2 and 3) are correct.
52.	In an HMM, observation likelihoods measure	
	(a)	The likelihood of a POS tag given a word
	(b)	The likelihood of a POS tag given the preceding tag
	(c)	The likelihood of a word given a POS tag
	(d)	The likelihood of a POS tag given two preceding tags
53.	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?	
	(a)	5,5,2
	(b)	5,5,0
	(c)	7,5,1
	(d)	7,4,2
54.	Two words with very closely related meanings	

	(a)	Antonyms
	(b)	Homonyms
	(c)	Synonyms
	(d)	Hyponymy
55.	Focus on what the words conventionally mean, rather than on what an individual speaker might think they mean, or want them to mean, on a particular occasion; concerned with objective or general meaning and avoids trying to account for subjective or local meaning	
	(a)	semantic features
	(b)	semantic analysis
	(c)	Semantic roles
	(d)	semantics
56.	Polysemy is a Greek word, which means	
	(a)	Many names
	(b)	Many signs
	(c)	Many meanings
	(d)	Many verbs
57.	Which of the following is not correct with respect to levels of semantic analysis?	
	(a)	Word level
	(b)	Character level
	(c)	Sentence level
	(d)	Utterance level
58.	Which of the following is not correct with respect to Word Sense Disambiguation (WSD)	
	(a)	It offers sense definitions of words
	(b)	Identifies synsets of synonyms
	(c)	Defines a number of semantic relations
	(d)	It's not free
59.	Phrase structure rules are of the form $A \rightarrow BC$ which states that	
	(a)	A is directed towards BC
	(b)	A implies B and C
	(c)	Constituents A can be written as two constituents B and C
	(d)	BC holds value of A
60.	A prepositional phrase consists of a preposition and its	
	(a)	Object
	(b)	Subject

	(c)	Noun
	(d)	Verb
61.	"We always play football after work." Which is a prepositional phrase?	
	(a)	Always play football
	(b)	After work
	(c)	Always play
	(d)	Football after
62.	"The tour includes three Asian countries." Which is a noun phrase?	
	(a)	The tour includes
	(b)	three Asian countries
	(c)	Three asian
	(d)	Tour includes
63.	two or more words with the same form and related meanings by extension (foot of a person, of a bed, of a mountain); based on similarity	
	(a)	Metonymy
	(b)	Hyponymy
	(c)	Polysemy
	(d)	Hyponym
64.	Homophones for the word piece	
	(a)	Peace
	(b)	Conflict
	(c)	Noise
	(d)	Irritation
65.	Car is hyponym of	
	(a)	Scooter
	(b)	Cycle
	(c)	Rickshaw
	(d)	Automobile
66.	Dog is hyponym of	
	(a)	Forest
	(b)	Human
	(c)	Animal
	(d)	Automobile

67.	Mango is hyponym of	
	(a)	Forest
	(b)	Human
	(c)	Fruits
	(d)	Sweet
68.	The words Blood bank, Sperm bank and Egg bank are the example of,	
	(a)	Polysemy
	(b)	Hypernym
	(c)	Antonym
	(d)	Metonymy
69.	Software designed for taking i/p data(text) and give structural representation of the input after checking the correct syntax or grammar is	
	(a)	Compiler
	(b)	Parser
	(c)	Painter
	(d)	Easydraw
70.	Two words are there with same spelling as “magazine”. One has meaning as something you read and another is cartridge to store bullets for a gun. However both words senses are related as to store or save somewhere. This is an example of	
	(a)	Metonymy
	(b)	Hyponymy
	(c)	Polysemy
	(d)	Hyponym
71.	Two words are there with different spelling but sound is same wring(1) and wring(2). First one means to twist something and second one means you wear in your finger. This is an example of	
	(a)	Homonymy
	(b)	Hyponymy
	(c)	Polysemy
	(d)	Homophony
72.	The statement “Time passes very quickly” can be represented as	
	(a)	AdvP->(Intens) NP
	(b)	AdvP->(Intens) Adv
	(c)	N->Wh-NP VP
	(d)	S->Wh-NP VP
73.	The statement “Which team won the match?” can be represented as	

	(a)	N->Wh-NP VP
	(b)	S->Wh-NP VP
	(c)	VP->Wh-NP VP
	(d)	S->Wh-NP NP
74.	The statement “Which mobiles can you show me in your shop?” can be represented as	
	(a)	N->Wh-NP Aux NP VP
	(b)	S->Wh-NP Aux NP NP
	(c)	S->Wh-VP Aux NP VP
	(d)	S->Wh-NP Aux NP VP
75.	The statement “ eat a pizza” can be represented as	
	(a)	NP → Verb VP
	(b)	VP → Verb PP
	(c)	VP → Verb NP
	(d)	VP → Verb NP PP