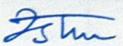


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 Class : CENLP-1 Division : I Roll No. : 1032170273 Academic Year : 2020 - 2021  
 Subject : CCNLP Assignment / Test No. : 1 Date : 14/12/2020

### PLEDGE

I solemnly affirm that I have written this Assignment/Test based on my own preparation. I have neither copied it from others nor given it to others for coping. I know that this is to be submitted as a part of my submission at the end of the term.



Signature of the student

Q. No.	1	2	3	4	5	6	7	8	9	10	Total
Marks/Grade											

Name & sign of the faculty Member

(Please start writing assignment/ test from here)

Question 1

Following are the three principles of cognitive systems:

=> Learn : The system leverages data to make inference about the systems a domain, a topic, a person or an issue based on training and observation from all variety, volumes & velocity of data.

Model : To learn, the system needs to create a representation of a domain and assumption that dictates what learning algorithm is used.



Generative Hypothesis : A cognitive system assumes that there is no single correct answer. Therefore, it is probabilistic. A hypothesis is a candidate explanation for some of the data already understood.

### Question 2

1) Sensitivity =  $TP / TP + FN$

$$S_{\text{apple}} = 7 / 7 + 4 = 63.63\%$$

2) Specificity =  $TN / TN + FP$

$$S_{\text{apple}} = 8 / (8 + 17) = 0.32 = 32\%$$

3) Accuracy =  $TP + TN / N = (7+8) / 36 = 41.66\%$

4) Misclassification =  $FP + FN / N = (17+4) / 36 = 58.33\%$

Redrawn Matrix for apple :

$$\begin{bmatrix} 7 & 17 \\ 4 & 8 \end{bmatrix}$$

### Question 3

POS Tagging : And now for something completely different.

[CC] [RB] [IN] [NN] [RB] [JJ]

→ CC : Conjunction : Words used to connect sentences or clauses.

→ RB : Adverb : Something that modifies or qualifies an adjective, verb or an adverb.

→ IN : Preposition : Precedes a noun and expresses its relation to another element in the sentence.

→ [NN] : Noun : Used to identify any class of people, places or things.

→ [JJ] : Adjective : A word that is used to describe a noun.

### Question 4

There are two types of morphemes :

- Free : Which have a meaning of its own independently  
eg: Walk or Eat.

- Bound : These are used to modify free morphemes and doesn't have a meaning of its own

Using Bound morphemes to modify & form words:

- Inflectional morphemes : These alter the grammatical meaning of a word.

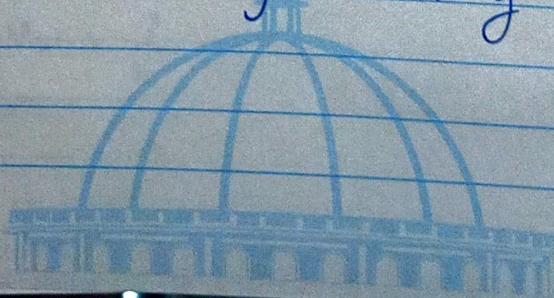
Example : Modify a noun : Using s : Example boy → boys  
Modify an adj. : Using -er, -est :

Example large - larger

Modify a verb : Using -ed, -ing :

Example walk - walking

These alter the degree / Tense of the word.



Derivational Morpheme: A morpheme is derivational when it changes a semantic meaning of a word. Thus there are either prefixes or suffixes

### Prefix Examples

Using 'un': Happy becomes Un happy

'anti': Thus becomes Antithesis

Suf  
Postfix examples :

Using '-ion': Register becomes Registration  
(adj) (N)

Using '-ness': Kind becomes Kindness  
(adj) (noun)

