Unit 5 - Week 3

Assignment 3

The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.

Due on 2019-08-21, 23:59 IST.

1) **In the English language, derivational morphemes can be?** *1 point*

1. Prefixes, infixes and suffixes
2. Prefixes and suffixes
3. Prefixes only
4. Suffixes only.

1. 2. 3. 4.

No, the answer is incorrect.
Score: 0
Accepted Answers:
2.

2) **How many different lexemes are there in the following list?**
man, men, girls, girl, mouse *1 point*

1. 4
2. 5
3. 3
4. 2

1. 2. 3. 4.

No, the answer is incorrect.
Score: 0
Accepted Answers:
3.

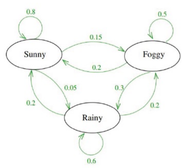
3) **Which of the following words contains both derivational as well inflectional suffixes:** *1 point*

1. regularity
2. carefully
3. older
4. availabilities

1. 2. 3. 4.

No, the answer is incorrect.
Score: 0
Accepted Answers:
4.

4) **Consider the following State Transition diagram with three states: Sunny, Foggy and Rainy. The state-transition probabilities are mentioned.** *1 point*



Assume that the weather yesterday was "Rainy", and today it is again "Rainy". What is the probability that tomorrow it will be "Foggy"? (Consider a First-Order Markov model for answering this question).

1. 0.12
2. 0.2
3. 0.3
4. 0.6

1. 2. 3. 4.

No, the answer is incorrect.
Score: 0
Accepted Answers:
2.

5) **Now, suppose you were locked in a room for several days, and you were asked about the weather outside. The only piece of evidence you have is whether your caretaker is carrying an umbrella or not. The probability that your caretaker carries an umbrella is 0.1 if the weather is "Sunny", 0.8 if it is "Rainy", and 0.3 if it is "Foggy".** *1 point*

Suppose you do not know how the weather was when your were locked in today. The caretaker always comes without an umbrella for three consecutive days (including today). Calculate the likelihood for the weather on these three days to have been {q1 = "Foggy", q2 = "Foggy", q3 = "Sunny"}. As you do not know how the weather is on the first day (i.e. today), assume the 3 weather situations are equi-probable. Use the concept of Hidden Markov Models and the state-transition probabilities given in Question 4.

1. 0.02268
2. 0.0057
3. 0.0147
4. 0.0285

1. 2. 3. 4.

No, the answer is incorrect.
Score: 0
Accepted Answers:
3.

6) **Assign Penn parts of speech tags to all the words in the following sentence using the notation word/POS:**
They refuse to permit us to obtain the refuse permit. *1 point*

1. They/PRP refuse/VBP to/TO permit/VB us/PRP to/TO obtain/VB the/DT refuse/NN permit/NN ./.
2. They/PRP refuse/VBP to/TO permit/NN us/PRP to/TO obtain/VB the/DT refuse/NN permit/VB ./.
3. They/PRP refuse/NN to/TO permit/VB us/PRP to/TO obtain/VB the/DT refuse/VBP permit/NN ./.
4. They/PRP refuse/NN to/TO permit/NN us/PRP to/TO obtain/VB the/DT refuse/VBP permit/VB ./.

1. 2. 3. 4.

No, the answer is incorrect.
Score: 0
Accepted Answers:
1.

7) **Assume that "x" represents the input and "y" represents the tag/label. Which of the following mappings are correct?** *1 point*

1. Generative Models - learn Joint Probability p(x, y)
2. Discriminative Models - learn Joint Probability p(x, y)
3. Generative Models - learn Posterior Probability p(y | x) directly
4. Discriminative Models - learn Posterior Probability p(y | x) directly

1. 2. 3. 4.

No, the answer is incorrect.
Score: 0
Accepted Answers:
1.
4.

8) **Suppose you are reading an article on Natural Language Processing. Till now, you have read the words "language" - 8 times, "aspect" - 3 times, "processing" - 2 times, "extraction" - 2 times, "question" - once and "dialogue" - once. What are the Maximum Likelihood Estimate (MLE) probability ($P_{processing}$) and Good Turing probability ($P^*_{GT(processing)}$) for reading "processing" as the next word?** *1 point*

1. 1/17, 2/17
2. 2/17, 1/17
3. 3/17, 2/17
4. 2/17, 1.5/17

1. 2. 3. 4.

No, the answer is incorrect.
Score: 0
Accepted Answers:
4.

9) **With the same setting as Question 8, calculate the MLE and Good Turing probabilities for reading "answering" as the next word:** *1 point*

1. 1/17, 2/17
2. 0, 1/17
3. 0, 2/17
4. 1/17, 1/17

1. 2. 3. 4.

No, the answer is incorrect.
Score: 0
Accepted Answers:
3.

10) **Given the following Wikipedia text on Artificial Intelligence:** *0 points*

In computer science, artificial intelligence (AI), sometimes called machine intelligence, is intelligence demonstrated by machines, in contrast to the natural intelligence displayed by humans. Colloquially, the term "artificial intelligence" is often used to describe machines (or computers) that mimic "cognitive" functions that humans associate with the human mind, such as "learning" and "problem solving".

Which of the following is correct?

1. $P_{continuation}$(intelligence) = 5, $P_{continuation}$(machines) = 2
2. $P_{continuation}$(intelligence) = 4, $P_{continuation}$(machines) = 2
3. $P_{continuation}$(intelligence) = 4, $P_{continuation}$(machines) = 3
4. Data insufficient

1. 2. 3. 4.

No, the answer is incorrect.
Score: 0
Accepted Answers:
2.