

## Introduction to Large Language Models

### Week-1 Assignment

**Number of questions: 10**

**Total mark: 10 X 1 = 10**

#### **Question 1:**

Which of the following best demonstrates the principle of distributional semantics?

- a. Words that co-occur frequently tend to share semantic properties.
- b. Each word has a unique, fixed meaning regardless of context.
- c. Syntax determines the entire meaning of a sentence.
- d. Distributional semantics is unrelated to word embeddings.

**Correct Answer: a**

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#### **Question 2:**

Which of the following words is **least likely** to be polysemous?

- a. Bank
- b. Tree
- c. Gravity
- d. Idea

**Correct Answer: c**

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#### **Question 3:**

Consider the following sentence pair:

Sentence 1: Riya dropped the glass.

Sentence 2: The glass broke.

Does Sentence 1 entail Sentence 2?

- a. Yes
- b. No

**Correct Answer: b**

**Solution:** Entailment is not guaranteed – the glass might not have broken.

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**QUESTION 4:**

Which sentence contains a **homonym**?

- a. He wound the clock before bed.
- b. She tied her hair in a bun.
- c. I can't bear the noise.
- d. He likes to bat after lunch.

**Correct Answer:** d

**Solution:** "Bat" – sports equipment or animal, depending on usage.

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**Question 5:**

Which of the following relationships are **incorrectly labeled**?

- a. Car is a meronym of wheel.
- b. Rose is a hyponym of flower.
- c. Keyboard is a holonym of key.
- d. Tree is a hypernym of oak.

**Correct Answer:** a

**Solution:** Wheel is a meronym of car, not the other way around.

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**Question 6:**

\_\_\_\_\_ studies how context influences the interpretation of meaning.

- a. Syntax
- b. Morphology
- c. Pragmatics
- d. Semantics

**Correct Answer:** c

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**Question 7:**

In the sentence, "After Sita praised Radha, she smiled shyly," who does "she" most likely refer to?

- a. Sita
- b. Radha
- c. Ambiguous
- d. Neither

**Correct Answer: c**

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**Question 8:**

Which of the following statements is true?

- (i) Word embeddings capture semantic similarity through context.
  - (ii) Morphological analysis is irrelevant in LLMs.
  - (iii) Hypernyms are more specific than hyponyms.
- a. Only (i)
  - b. Only (i) and (iii)
  - c. Only (ii) and (iii)
  - d. All of the above

**Correct Answer: a**

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**QUESTION 9:**

What issues can be observed in the following text?

On a much-needed #workcation in beautiful Goa. Workin & chillin by d waves!

- a. Idioms
- b. Non-standard English
- c. Tricky Entity Names
- d. Neologisms

Correct Answer: b,d

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**QUESTION 10:**

In semantic role labelling, we determine the semantic role of each argument with respect to the

\_\_\_\_\_ of the sentence.

- a. noun phrase
- b. subject
- c. predicate
- d. adjunct

Correct Answer: c

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