Quiz 1

1. Select the correct option: GPT-3 is a ____-gram model. (15 marks)

   a.. 1024 b. 2048
   c. 4096 d. 8192

2. In one line, explain why hallucinations can still occur in LLMs despite using advanced prompting techniques like Chain of Thought (CoT). (15 marks)

3. In one sentence, explain how **Self-Verification helps reduce factual errors** in an LLM's output. (15 marks)

4. **True or False:** Advanced prompting techniques (such as Chain of Thought and Self-Ask) can enhance an LLM's reasoning but may also **amplify biases** from training data, leading to **more persuasive yet incorrect responses** when the initial reasoning is flawed. Provide a **one-line explanation.** (15 marks)

5. Match the following (40 marks)

Prompting Technique	Primary Function/Characteristic
a. Zero-Shot CoT	1. Prompts the model to create a variety of reasoning paths on its own, then integrate the best results
b. Auto-CoT	2. Asks follow-up questions to refine the model's understanding and its final output
c. Self-Ask	3. Provides a step-by-step explanation *in one prompt* without any additional examples
d. Program of Thoughts (PoT)	4. Uses code-like structures or "scripts" to break down and solve tasks methodically
e. Tree of Thoughts	5. Explores branching pathways to evaluate multiple partial solutions hierarchically

Answers:

1. 2048
2. Because LLMs rely on probabilistic text generation and incomplete training data, they can confidently generate factually incorrect statements, leading to hallucinations despite structured reasoning prompts.
3. Self-verification has the model revisit or question its own answer, checking for inconsistencies or factual inaccuracies before finalizing the response.
4. True - Because LLMs rely on probabilistic generation and may contain inherent biases, any technique that structures or extends the model's reasoning (e.g., CoT, Self-Ask) can produce more detailed—but potentially biased or factually incorrect—responses if the foundational assumptions or data are flawed (incorrect).
5. Matchings:
    a. Zero-Shot COT → 3
    b. Auto-CoT → 1
    c. Self-ask → 2
    d. Program of Thoughts → 4
    e. Tree of Thoughts → 5