

# Ma322 Quiz 5 Review Solutions

## 1. True or False

- a) LLMs need to be retrained to respond to different prompting strategies.

**Solution: False**

LLMs can respond to different prompting strategies without retraining. Their ability to understand and follow instructions is built into their training.

- b) Using more detailed prompts always guarantees accurate responses from LLMs.

**Solution: False**

While detailed prompts often improve responses, they don't guarantee accuracy. LLMs can still make mistakes regardless of prompt detail.

- c) Chain of thought prompting can help reduce errors but doesn't eliminate them completely.

**Solution: True**

Chain of thought prompting improves reasoning by breaking down complex tasks, but LLMs can still make errors in their logic or conclusions.

## 2. System prompts help improve responses by

- a) Defining the AI's role and behavior upfront
- b) Training the model on new data
- c) Making the prompts shorter and more efficient
- d) Requiring specific programming languages

**Solution: a**

System prompts help by defining the AI's role and behavior upfront. This sets expectations and context for the model's responses without requiring retraining or specific programming.

## 3. What does the following code print out when executed?

```
template="Give {num} interesting facts about {subject} in {country}"

prompt=template.format(num="three", subject="food", country="Italy")
print(prompt)
prompt=template.format(country="num", subject="country", num="subject")
print(prompt)
```

**Solution**

```
Give three interesting facts about food in Italy
Give subject interesting facts about country in num
```

4. Role-based prompting is most effective for tasks that

- a) Require only factual information
- b) Need specific expertise or perspective
- c) Are purely computational
- d) Have only one correct answer

**Solution: b**

Role-based prompting works best for tasks needing specific expertise or perspective, as it helps frame the response from a particular viewpoint or domain knowledge.

5. When using chain of thought prompting, which is true?

- a) It only works for mathematical problems
- b) It helps the model break down complex reasoning into steps
- c) It makes responses shorter and more concise
- d) It requires multiple examples to work

**Solution: b**

Chain of thought prompting helps the model break down complex reasoning into steps, making the thinking process explicit and more reliable.

6. Prompting with Template Variables

- a) Create a template string using a template variable `{topic}` for asking the LLM to explain `{topic}` to a beginner.

```
template= CODE
```

**Solution**

```
template = "Please explain {topic} to a beginner."
```

- b) Evaluate your template using the string "machine learning"

```
prompt=template.format(CODE)
```

**Solution**

```
prompt = template.format(topic="machine learning")
```

- c) Call `get_completion` to get the response from the LLM

```
response = get_completion(CODE)
```

### Solution

```
response = get_completion(prompt)
```

d) Print out the prompt and completion.

```
CODE
```

### Solution

```
print(prompt)
print(response)
```

e) Add another template variable called `{level}` to the template above and ask the LLM to explain the topic at the specified difficulty level.

```
template = CODE
```

### Solution

```
template = "Please explain {topic} to someone at a {level} level."
```

f) Evaluate your template with topic as “machine learning” and level as “intermediate”. Save it in the `prompt` variable. Print out the prompt.

```
prompt=template.format(CODE)
CODE
```

### Solution

```
prompt = template.format(topic="machine learning", level="intermediate")
print(prompt)
```