

## Questions and Answers

### **1) What is LLM? Which platform contains LLM's?**

A): LLM stands for Large Language Model. These are AI models trained on huge amount of data to perform NLP tasks. Examples: ChatGPT (OpenAI), Gemini (Google), Claude (Anthropic), and models on Hugging Face.

### **2) What is Transformers and Pipeline?**

A): Transformers is a neural network or python library and Pipeline is a wrapper function which is provided by hugging face to perform NLP tasks like text generation, summarization, Translation using pre-trained models.

### **3) Differentiate between AI, ML, and DL.**

A): AI is a Ability of a computer or a machine to think, perform and make decisions like a human.

ML is a subset of AI- Make predictions based on past data.

DL is a subset of ML- Recognizes the patterns

#### **4) List any capabilities and limitations of LLMs.**

A): Capabilities: 1) Text generation 2) Translation.3)

Summarization 4) Sentiment Analysis

Limitations: 1) May hallucinate 2) May make False facts

#### **5) Why we need Langchain though we have LLM's ?**

A): As LLM's give only 1 shot Answer but we need complete application, So LangChain helps structure multi-step LLM interactions and connect with tools (APIs, databases). Only LLM's not workflow-aware.

#### **6) What is Prompt ? and what are the types of Prompts?**

A): A prompt is input text given to an LLM to guide output. Types: zero-shot, few-shot, chain-of-thought, (\*\*\*)System prompt, user prompt, assistant prompt)

#### **7) Give an example of a zero-shot prompt and a few-shot prompt.**

A): Zero-shot: 'Translate this to French: I am happy.'

Few-shot: 'English: Hello -> Spanish: Hola

English: Thank you -> Spanish: Gracias

English: Goodbye -> Spanish: Adis'

## 8) What is System Prompt and User Prompt?

A): System prompt : Defining a role(assigning a role to the system) (e.g., 'You are a helpful tutor.').

User prompt : Actual user query (e.g., 'Explain photosynthesis').

## 9) What is temperature tuning and define appropriate behaviour at different temperatures?

A): Temperature is a parameter by which nature of response is controlled.

<0.7 (0.2,0.3..)= Factual

0.7 = Factual + Creative (Balanced)

>0.7 (1.3,1.5..)= Creative

## 10) What is difference between transformers Inference API and Inference Client?

A): Transformers: (Downloads the model )

Inference API : Online API to query Hugging Face models.

Inference Client : Python library offering similar functionality as Inference API (Used to request LLM service from server) but with more programmatic control.

### **11) What is Postman?**

A): Postman is a tool which is used to

- 1) Send API requests &
- 2) Visualize the response from the servers

i.e Testing and Managing APIs without writing actual code.

### **12) What is Fallback mechanism and why it is required?**

A): 1) Fallback mechanism is backup mechanism ,where primary fails, secondary comes into action.

- 2) Useful to maintain availability in production LLM systems.

### **13) What is AI Pair Programming ? what are the tools for the same?**

A): AI Pair Programming is writing or reviewing the code with AI that involves tools like GitHub Copilot ,Cursor AI,Lovable AI, Amazon CodeWhisperer helping with code suggestions and completions.

### **14) What is Test case generation? Which python library used for the same?**

A): Test case generation creating edge cases or test cases from code or requirements. Python libraries: Pytest

### **15) What are the examples of AI?**

A): Siri, Alexa, ChatGPT, Self driving cars

### **16)What is Hugging Face?**

A): Hugging Face is a company and platform that provides models, models, datasets, and APIs to make it easy for developers, researchers, and organizations to work with machine learning, especially in natural language processing (NLP) and transformers.

### **17)What are gated models ? Non gated models?**

A): Gated Models: 1) Heavy & Authorized models  
2) Needs Hugging face Token  
3) EX: Mistral

Non-Gated Models : 1) Light Models  
2) No need of Hugging face token  
3) EX: gpt2

### **18) What is textwrap ?**

A): 1) Textwrap is a module which makes the random text into proper readable lines .

2) Contains different functions like

- 1) fill ( ) ---- Returns a single wrapped string
- 2) wrap( ) ---- Returns a list of lines (wrapped text)