Task: “Build & Judge a Mini AI”

Part 1 — Chronology of AI

Write **one real-world example** for each stage:

Machine Learning → E-Commerce Recommendation Engine recommending products based on past purchase behavior, interests and other similar purchases.

Deep Learning → Self-driving cars using neural network to process visuals to identify roads, pedestrians, traffic signals and using GPS data to plan the routes

Computer Vision → In Agriculture, computer vision is used to identify crop health,soil condition and diseases

NLP → Using Google to translate sentences in different languages uses NLP or Using Alexa for asking weather information

LLMs → LLMs are used to generate content ideas and automate the content creation as well as for coding e.g Github copilot which suggest next lines based on previous code context

Part 2 — Deep Learning Architectures

Match the model to the use case:

1. **RNN**
2. **LSTM**
3. **CNN**
4. **Transformer**

Use cases:

Image recognition -> 3. CNN

Text translation (old Google Translate) -> 2. LSTM

Predicting the next word in ChatGPT -> 4. Transformer

Early speech-to-text systems -> 1. RNN

Part 3 — Frameworks

Choose one framework (PyTorch / TensorFlow / Keras).

In **one sentence**, explain why you would use it if you were a student making a cat-vs-dog classifier.

Ans : Cat vs Dog classification is a simple binary classification task for which I will use **Keras** as it comes with pre-built models and is easy to use.

Part 4 — Evaluation Metrics

Imagine you built a spam filter. Answer:

Precision: If it marks 10 emails as spam and 7 are truly spam → what’s Precision? **Ans : 0.7**

Recall: If there were 12 spam emails in total, how many did it catch? (use same example) **Ans : 0.58**

F1 Score: Use the formula and calculate (round to 2 decimals). **Ans : 0.63**

MSE/MAE: Predict your friend’s age (actual = 15, prediction = 18). Which metric punishes the error more? **Ans : MSE**

BLEU/ROUGE: AI translated “The cat sat on the mat” as “Cat is on the mat.” Which metric (BLEU/ROUGE) do you think would give a high score? **Ans : ROUGE**

Part 5 — Responsible AI & Explainability

You built an AI that predicts loan approvals.

A customer asks, “Why was my loan rejected?”

Write **one simple way** to explain the decision fairly (e.g., “Your income was too low compared to the loan size”).

Ans : Based on your installment history of past loans, you have missed multiple EMIs due to which your credit score got a hit and hence the loan was rejected.

Deliverable: Each trainee should write answers in 5–7 short lines.