Question 1

Describe the difference between AI, ML, DL?

Double-click (or enter) to edit

Question 2

What are the branches of ML, and describe each

Double-click (or enter) to edit

Question 3

Describe each of the following terms:

Write your answer next to each of them after double clicking the cell:

- **Sample or input**
- **Prediction or output**
- **Target or Label**
- **Prediction error or loss value**
- **Classes**
- **Ground-truth or annotations**
- **Binary classification**
- **Multiclass classification**
- **Multilabel classification**
- **Scalar regression**
- **Vector regression**
- **Mini-batch or batch**

Question 4

What is the difference between Classification and Regression?

Double-click (or enter) to edit

Question 5

How do you evaluate ML model? Describe the protocol and the datasets types needed

Double-click (or enter) to edit

Question 6

Why we need a validation set? Describe different spliting methods of data

When you need to use cross validation?

Double-click (or enter) to edit

Question 7

What is the difference between overfitting and underfitting?

Double-click (or enter) to edit

Question 8

Mention the five steps to avoid overfitting

Double-click (or enter) to edit

Question 9

Mention the 7 steps of universal ML workflow

Double-click (or enter) to edit

Question 10

For each of the following problem types, mention the proper loss function and output activation:

- Binary classification
- Multi-class, single label classification
- Multi-class, multi label classification
- Regression with arbitrary output
- Regreression with (0,1) output

Double-click (or enter) to edit

Question 11

Describe the Convolution layers in brief, their advantages over Dense, and when to use them?

Double-click (or enter) to edit

Question 12

What are the main design parameters to Conv2D layers?

Double-click (or enter) to edit

Question 13

Roughtly, how many training examples you need for K-classes classification problem?

What would you do if you have small of insuffuicient data?

Double-click (or enter) to edit

Question 14

You have a pre-trained ConvNet (conv_base), and you want to use transfer learning from that model to your problem.

What are the different Transfer Learning scenarios you can use the pre-trained ConvNet with your model?

Double-click (or enter) to edit

Question 15

You think to fine tune the conv_base.

How do you decide what type of transfer learning you should perform on a new dataset?

Double-click (or enter) to edit