A4.1

Machine learning fundamentals

CHAPTER ASSIGNMENT · 16 MARKS

Name _____ Class _____ No. _____ Date _____

Answer every question in the space given. Show your working. You may use the chapter page to help you.

Questions from the Guru Jazzy chapter page, for classroom use.

Exam-style questions

1 Distinguish between regression and classification. [2]

2 An email client sorts messages into Primary, Social and Spam. Identify the type of learning and justify your choice. [3]

3 A self-driving model trained in one city is adapted for another. Define transfer learning, and outline how this example fits it, with one limitation. [4]

4 A start-up will process real-time data on a large scale. Identify suitable hardware and outline a limitation. [3]

5 A university wants to analyse lectures in real time. Compare using cloud GPUs and an on-site edge device. [4]

Chapter quiz

Q1 How do AI, ML and deep learning relate?

A	B	C	D
Deep learning ⊂ ML ⊂ AI	AI ⊂ ML ⊂ deep learning	They are unrelated	They mean the same

Q2 Which AI exists today?

A	B	C	D
Only narrow AI	Only general AI	Both	Neither

Q3 Predicting a house price is...

A	B	C	D
Regression	Classification	Clustering	Rollback

Q4 Sorting email into spam or not is...

A	B	C	D
Classification	Regression	Unsupervised	Transfer

Q5 A robot learning to walk from falls and successes uses...

A	B	C	D
Reinforcement learning	Clustering	Linear regression	Spooling

Q6 Fine-tuning a general speech model for one accent is...

A	B	C	D
Transfer learning	Unsupervised learning	Normalization	Reinforcement

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Q7 Why are GPUs good for machine learning?

A	B	C	D
Many cores do the same maths in parallel	They have large screens	They store data forever	They need no power

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Q8 Which chip can be reprogrammed after it is made?

A	B	C	D
FPGA	ASIC	Both	Neither

Q9 What is a tensor?

A	B	C	D
An array of three or more dimensions	A single number	A network cable	A CPU register

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End of assignment · Check your answers against the chapter at gurujazzy.com/subjects/ib-computer-science/a4-1-ml-fundamentals/