Most-to-Most Important Questions (Ch. 1, 2, 3, 4, 7)

Chapter	Question	Years & Exams (with Marks)
Ch. 1: Introduction	Define Machine Learning; explain types of learning (supervised, unsupervised, reinforcement).	Summer 2025 – 3M; Winter 2024 – 3M; Summer 2023
Ch. 1: Introduction	Well-posed learning problem – Explain features.	Summer 2025 – 4M; Summer 2023 – 7M
Ch. 1: Introduction	Issues in Machine Learning.	Winter 2023 – 3M; Summer 2022 – 4M
Ch. 1: Introduction	Supervised vs Unsupervised Learning – Differentiate.	Winter 2023 – 3M; Summer 2021 – 7M
Ch. 2: Preparing to Model	Data Pre-processing techniques (missing values, encoding, scaling).	Summer 2025 – 7M; Winter 2023 – 7M; Summer 2023
Ch. 2: Preparing to Model	Handling Outliers – methods.	Summer 2023 – 4M; Winter 2022 – 3M
Ch. 2: Preparing to Model	Sampling & Bootstrap sampling.	Summer 2023 – 4M; Winter 2022 – 3M
Ch. 3: Modelling & Evaluation	Confusion Matrix (accuracy, error, precision, recall, F-measure, Kappa).	Summer 2023 – 7M; Winter 2023 – 7M; Winter 2024 –
Ch. 3: Modelling & Evaluation	K-fold Cross Validation (with example).	Summer 2025 – 4M; Winter 2023 – 3M; Summer 2023
Ch. 3: Modelling & Evaluation	Under-fitting & Over-fitting (causes, examples, remedies).	Winter 2023 – 4M; Summer 2022 – 7M
Ch. 4: Feature Engineering	Feature Engineering: definition and need.	Winter 2024 – 3M; Summer 2025 – 3M
Ch. 4: Feature Engineering	Feature Selection – Approaches & Importance.	Summer 2023 – 7M; Winter 2023 – 4M
Ch. 4: Feature Engineering	PCA vs LDA (dimensionality reduction).	Summer 2022 – 7M
Ch. 7: Supervised Learning	KNN – Algorithm, pros/cons, lazy learner concept.	Winter 2024 – 7M; Summer 2025 – 4M; Winter 2023 –
Ch. 7: Supervised Learning	Decision Tree – Algorithm, entropy/information gain, overfitting & pruning.	Winter 2024 – 7M; Summer 2025 – 7M; Winter 2023 –
Ch. 7: Supervised Learning	Regression – Logistic vs Linear regression; Multiple Linear regression.	Winter 2024 – 4M; Summer 2025 – 7M; Winter 2023 –