🔹 Day 73 – AWS AI & ML Services (Part 1)

Section 1: AI/ML Basics on AWS

Q1. What is Amazon SageMaker?
Answer: A fully managed service to build, train, and deploy ML models quickly.
💡 Tip: Mention it removes infrastructure overhead.

Q2. Why use AWS for ML instead of on-prem?
Answer: Pay-as-you-go GPU/CPU, scalable storage, pre-built services.
💡 Tip: Highlight faster experimentation + cost savings.

Q3. What is the typical ML workflow on AWS?
Answer: Data collection → preprocessing (Glue) → training (SageMaker) → deployment (SageMaker endpoints).
💡 Tip: Keep lifecycle in mind during interviews.

Q4. What is SageMaker Studio?
Answer: An IDE for ML with notebooks, debugging, and model monitoring.
💡 Tip: Compare it to Jupyter Notebook but fully managed.

Q5. What are SageMaker built-in algorithms?
Answer: Pre-optimized algorithms like XGBoost, Linear Learner, K-Means.
💡 Tip: Saves time vs custom coding.

Section 2: Computer Vision Services

Q6. What is Amazon Rekognition?
Answer: A service for image/video analysis → object, face, text detection.
💡 Tip: Mention use cases like security & content moderation.

Q7. Difference between Rekognition and Textract?
Answer: Rekognition → image/video labeling; Textract → extract text from scanned docs.
💡 Tip: Textract goes beyond OCR by detecting tables/forms.

Q8. What is AWS Panorama?
Answer: An edge device/software for running CV models on-prem cameras.
💡 Tip: Useful when real-time local video analysis is needed.

Q9. Can Rekognition detect inappropriate content?
Answer: Yes, supports moderation APIs for images/videos.
💡 Tip: Interviewers love content moderation example.

Q10. What is Amazon Lookout for Vision?
Answer: Detects defects in manufacturing images.
💡 Tip: Industry-specific service, mention industrial IoT.

Section 3: NLP Services

Q11. What is Amazon Comprehend?
Answer: NLP service for sentiment analysis, entity recognition, and topic modeling.
💡 Tip: Use case → customer feedback insights.

Q12. Difference between Translate and Comprehend?
Answer: Translate = language translation, Comprehend = language understanding.
💡 Tip: Together = multilingual insights.

Q13. What is Amazon Polly?
Answer: Text-to-speech service that generates lifelike voices.
💡 Tip: Use case → audiobooks, accessibility apps.

Q14. What is Transcribe?
Answer: Converts speech-to-text with support for multiple languages.
💡 Tip: Often paired with Polly for speech apps.

Q15. What is Comprehend Medical?
Answer: Specialized NLP for extracting health terms, dosage, medical conditions.
💡 Tip: Mention HIPAA compliance.

Section 4: Conversational AI

Q16. What is Amazon Lex?
Answer: A chatbot service with automatic speech recognition + NLP.
💡 Tip: Same tech as Alexa.

Q17. How does Lex integrate with AWS ecosystem?
Answer: Works with Lambda, DynamoDB, Connect (contact center).
💡 Tip: Common for customer support bots.

Q18. Difference between Lex and Polly?
Answer: Lex = chatbot engine, Polly = text-to-speech.
💡 Tip: Together they build voice assistants.

Q19. What is Amazon Connect?
Answer: Cloud contact center with AI-powered customer service.
💡 Tip: Pair with Lex for self-service calls.

Q20. Example use case of Lex in business?
Answer: Airline chatbot for booking, canceling, and FAQs.
💡 Tip: Keep business examples handy.

Section 5: Data & ML Pipeline Services

Q21. What is AWS Glue?
Answer: A serverless ETL service to prepare data for analytics/ML.
💡 Tip: Often used before SageMaker training.

Q22. How does Athena help in ML?
Answer: Query S3 data using SQL without managing servers.

💡 Tip: Great for preprocessing big data.

Q23. What is Amazon Kendra?
Answer: Intelligent search service powered by ML.
💡 Tip: Use case → enterprise document search.

Q24. What is Amazon Forecast?
Answer: Time-series forecasting (e.g., sales, demand prediction).
💡 Tip: Built using same tech as Amazon retail.

Q25. What is Amazon Personalize?
Answer: Provides product/movie recommendations.
💡 Tip: Same tech behind Amazon.com recommendations.

Section 6: Real-World AI/ML on AWS

Q26. How does AWS support fraud detection?
Answer: Use SageMaker + Fraud Detector service.
💡 Tip: ML + rules-based detection combo.

Q27. How to deploy ML at scale with low ops effort?
Answer: Use SageMaker endpoints or Lambda with pre-trained models.
💡 Tip: Compare real-time vs batch inference.

Q28. How to handle ML model monitoring in AWS?
Answer: SageMaker Model Monitor detects data drift & quality issues.
💡 Tip: Important for long-term model accuracy.

Q29. What is the Shared Responsibility Model for AI?
Answer: AWS manages infrastructure; customer manages data, models, and usage.
💡 Tip: Always highlight data security.

Q30. How to pick the right AWS AI service?
Answer: Use pre-built AI (Rekognition, Lex, Comprehend) for common

tasks; SageMaker for custom ML.

💡 Tip: Decision depends on complexity + flexibility needed.