Q1–Q10

1. **Which Azure Cognitive Service is primarily used to create a bot from a structured FAQ document?**
   - A. Translator Text
   - B. QnA Maker
   - C. Text Analytics
   - D. Language Understanding (LUIS)

   Answer: B
   Explanation: QnA Maker allows you to extract question-answer pairs from FAQ documents to create conversational bots.
   Reference: QnA Maker Overview
2. **What does sentiment analysis measure in a text document?**
   - A. The overall topic of the text
   - B. The tone of the document (positive, negative, neutral)
   - C. The entities identified in the document
   - D. The translation accuracy of the document

   Answer: B
   Explanation: Sentiment analysis detects the tone or attitude of the text, which can be positive, negative, or neutral.
   Reference: Sentiment Analysis in Azure
3. **Which Azure service is best for converting spoken language into written text?**
   - A. Speech-to-Text
   - B. Text Analytics
   - C. Translator Text
   - D. Form Recognizer

   Answer: A
   Explanation: Azure Speech-to-Text provides transcription services for audio data.
   Reference: Speech-to-Text Overview
4. **Which machine learning approach predicts a continuous numeric value?**
   - A. Clustering
   - B. Classification
   - C. Regression
   - D. Reinforcement Learning

   Answer: C
   Explanation: Regression is used for predicting continuous values like prices or temperatures.
   Reference: Types of Machine Learning
5. **Which Azure service allows the automated translation of text between languages?**
   - A. Language Understanding (LUIS)
   - B. Text Analytics
   - C. Translator Text
   - D. Azure Bot Service

   Answer: C
   Explanation: Translator Text supports automatic, real-time language

translation.
Reference: Translator Text API

6. **Which type of AI workload involves understanding and responding to human language?**
   - A. Computer Vision
   - B. Conversational AI
   - C. Anomaly Detection
   - D. Reinforcement Learning

   Answer: B
   Explanation: Conversational AI is used for applications like chatbots and voice-based assistants.
   Reference: Conversational AI Workloads
7. **What is the main purpose of Azure Form Recognizer?**
   - A. Classifying images into categories
   - B. Extracting key-value pairs and table data from documents
   - C. Translating text into multiple languages
   - D. Detecting objects in an image

   Answer: B
   Explanation: Form Recognizer extracts structured data from documents like invoices and forms.
   Reference: Form Recognizer Overview
8. **Which Azure Cognitive Service is most suitable for detecting entities such as people, places, and organizations in text?**
   - A. Text Analytics
   - B. Translator Text
   - C. Custom Vision
   - D. QnA Maker

   Answer: A
   Explanation: Text Analytics includes entity recognition for structured data extraction.
   Reference: Text Analytics Entity Recognition
9. **What is the primary purpose of clustering in machine learning?**
   - A. Predicting future events
   - B. Grouping data points based on similarity
   - C. Classifying labeled data into categories
   - D. Performing sentiment analysis on text

   Answer: B
   Explanation: Clustering organizes data into groups based on common characteristics without labeled data.
   Reference: Clustering Overview
10. **Which metric is commonly used to evaluate classification models?**
    - A. Mean Squared Error
    - B. True Positive Rate
    - C. Root Mean Squared Error
    - D. R-squared

    Answer: B
    Explanation: True Positive Rate measures how many correct positive

predictions the model makes.
Reference: Classification Metrics

Q11–Q20

11. **Which Azure Cognitive Service enables developers to create conversational bots using pre-existing FAQs?**
    - A. Computer Vision
    - B. Azure Bot Service
    - C. QnA Maker
    - D. Language Understanding (LUIS)

    Answer: C
    Explanation: QnA Maker extracts question-answer pairs from structured or semi-structured data to create conversational bots.
    Reference: QnA Maker Overview
12. **What does a "label" represent in a supervised machine learning dataset?**
    - A. The feature set of the dataset
    - B. The predicted output of the model
    - C. A variable used to split the data into training and testing datasets
    - D. The unique identifier of each dataset entry

    Answer: B
    Explanation: A label is the value that the machine learning model is trained to predict in supervised learning.
    Reference: Supervised Learning Concepts
13. **Which service provides real-time text translation between multiple languages?**
    - A. Azure Speech
    - B. Translator Text
    - C. Text Analytics
    - D. Language Understanding (LUIS)

    Answer: B
    Explanation: Translator Text provides real-time translation for multiple languages using Azure Cognitive Services.
    Reference: Translator Text API
14. **What is a benefit of using QnA Maker in chatbot development?**
    - A. It identifies language sentiment in conversations
    - B. It automates speech-to-text transcription
    - C. It extracts and organizes question-answer pairs from documents
    - D. It enables users to upload audio files for analysis

    Answer: C
    Explanation: QnA Maker helps build bots by transforming FAQ documents into question-answer pairs.
    Reference: QnA Maker Documentation
15. **Which Azure Cognitive Service is used for detecting outliers in time-series data?**
    - A. Anomaly Detector
    - B. Computer Vision

- C. Text Analytics
- D. Azure Bot Service

  Answer: A

  Explanation: Anomaly Detector detects irregular patterns or anomalies in time-series data.

  Reference: Anomaly Detector Overview

16. **Which Microsoft principle ensures that AI systems handle data securely and responsibly?**
    - A. Reliability
    - B. Fairness
    - C. Privacy and Security
    - D. Accountability

      Answer: C

      Explanation: Privacy and Security ensure data compliance and responsible handling in AI systems.

      Reference: Microsoft Responsible AI Principles
17. **In supervised learning, what is the primary use of labeled data?**
    - A. To identify clusters in the dataset
    - B. To train the model to predict specific outputs
    - C. To evaluate the clustering performance
    - D. To extract features for analysis

      Answer: B

      Explanation: Labeled data pairs input features with target values to train models in supervised learning.

      Reference: Supervised Learning Overview
18. **Which machine learning approach would you use to classify emails as spam or not spam?**
    - A. Clustering
    - B. Regression
    - C. Classification
    - D. Reinforcement Learning

      Answer: C

      Explanation: Classification categorizes data into discrete classes, such as spam and not spam.

      Reference: Classification in ML
19. **Which metric is typically used to evaluate a regression model's performance?**
    - A. Mean Absolute Error (MAE)
    - B. True Positive Rate
    - C. Accuracy
    - D. F1 Score

      Answer: A

      Explanation: MAE calculates the average magnitude of errors between predicted and actual values in regression models.

      Reference: Regression Model Evaluation
20. **What role does the REST endpoint play in a deployed Azure Machine Learning pipeline?**
    - A. It validates model parameters
    - B. It serves as the interface for external applications to consume the pipeline

- C. It monitors pipeline performance
- D. It configures authentication for the pipeline

  Answer: B

  Explanation: REST endpoints allow external applications to integrate with and consume the deployed pipeline.

  Reference: Azure Machine Learning Pipeline Deployment

Q21–Q30

21. **Which Azure Cognitive Service is used to extract key phrases from text documents?**
    - A. Translator Text
    - B. Text Analytics
    - C. Custom Vision
    - D. QnA Maker

    Answer: B

    Explanation: Text Analytics includes key phrase extraction, enabling the identification of important phrases in text.

    Reference: Text Analytics Overview
22. **What is the primary difference between Optical Character Recognition (OCR) and Object Detection?**
    - A. OCR recognizes printed or handwritten text, while object detection identifies specific objects in images.
    - B. OCR focuses on key-value extraction, while object detection translates text in images.
    - C. OCR performs clustering, while object detection detects anomalies in data.
    - D. OCR recognizes faces, while object detection classifies images.

    Answer: A

    Explanation: OCR extracts text from images, while object detection identifies objects and their locations in an image.

    Reference: Computer Vision Overview
23. **How does Azure Bot Service integrate with QnA Maker?**
    - A. By adding natural language understanding for intent detection
    - B. By converting FAQs into conversational dialogs
    - C. By enabling object detection in chatbot interactions
    - D. By providing language translation capabilities

    Answer: B

    Explanation: Azure Bot Service connects with QnA Maker to enable bots to use structured question-answer data for conversations.

    Reference: Azure Bot Service and QnA Maker Integration
24. **Which Azure Cognitive Service can analyze text to detect language, sentiment, and key phrases?**
    - A. Translator Text
    - B. Text Analytics
    - C. Computer Vision

- D. Speech-to-Text
  Answer: B
  Explanation: Text Analytics includes functionality for detecting sentiment, language, and key phrases in text data.
  Reference: Text Analytics Overview

25. **What is the purpose of Mean Absolute Error (MAE) in evaluating a machine learning model?**
    - A. To measure the total variance explained by the model
    - B. To determine the average magnitude of prediction errors
    - C. To evaluate the accuracy of classification models
    - D. To calculate the relationship between features
      Answer: B
      Explanation: MAE measures the average absolute difference between predicted and actual values in regression tasks.
      Reference: Regression Metrics
26. **What is the main goal of clustering in machine learning?**
    - A. To identify relationships between variables
    - B. To group data points based on similarities
    - C. To classify data into predefined categories
    - D. To detect anomalies in data
      Answer: B
      Explanation: Clustering groups data points into clusters based on shared characteristics without requiring labeled data.
      Reference: Clustering Overview
27. **What is the difference between a feature and a label in a dataset?**
    - A. Features are the inputs to the model, and labels are the outputs it predicts.
    - B. Features are used for evaluation, while labels are for training only.
    - C. Features define clusters, while labels specify anomalies.
    - D. Features are the metrics, and labels are the key phrases in the dataset.
      Answer: A
      Explanation: Features are input variables used for predictions, while labels are the target outputs the model is trained to predict.
      Reference: Supervised Learning Basics
28. **Which Azure service is most suitable for detecting anomalies in IoT time-series data?**
    - A. Anomaly Detector
    - B. Azure Bot Service
    - C. Text Analytics
    - D. Computer Vision
      Answer: A
      Explanation: Anomaly Detector specializes in detecting deviations or irregular patterns in time-series data.
      Reference: Anomaly Detector Overview
29. **Which task is an example of face detection in AI?**
    - A. Identifying a person's emotional state from their expression
    - B. Translating handwritten text into digital format
    - C. Detecting language from a text document

- D. Grouping similar data points into clusters
  Answer: A
  Explanation: Face detection can identify emotions like happiness or anger from a person's facial expressions.
  Reference: Face API Overview

30. **What is the purpose of sentiment analysis in text processing?**
    - A. To group text into thematic categories
    - B. To detect the overall sentiment (positive, negative, neutral) of a text
    - C. To classify data into predefined labels
    - D. To translate text into different languages
      Answer: B
      Explanation: Sentiment analysis determines whether the text expresses a positive, negative, or neutral sentiment.
      Reference: Sentiment Analysis Overview

Q31–Q40

31. **Which Azure Cognitive Service is designed to analyze large text datasets for tasks like categorization and language detection?**
    - A. Translator Text
    - B. Text Analytics
    - C. Form Recognizer
    - D. Custom Vision
      Answer: B
      Explanation: Text Analytics provides features like language detection, sentiment analysis, and key phrase extraction, making it ideal for text categorization.
      Reference: Text Analytics Overview
32. **Which service provides functionality to translate text into multiple languages in real-time?**
    - A. Azure Bot Service
    - B. Translator Text
    - C. Speech-to-Text
    - D. Form Recognizer
      Answer: B
      Explanation: Translator Text offers real-time text translation into multiple languages using Azure Cognitive Services.
      Reference: Translator Text API Overview
33. **What is the primary focus of Natural Language Processing (NLP)?**
    - A. Analyzing and generating human language data
    - B. Detecting anomalies in numeric datasets
    - C. Translating images into text
    - D. Recognizing objects in images
      Answer: A
      Explanation: NLP focuses on understanding, analyzing, and generating

human language data in text and speech formats.
Reference: NLP Overview

34. **Which guiding principle of Microsoft AI emphasizes empowering people with disabilities?**
    - A. Reliability and Safety
    - B. Inclusiveness
    - C. Fairness
    - D. Accountability

    Answer: B
    Explanation: The principle of inclusiveness ensures AI technologies are designed to benefit everyone, including people with disabilities.
    Reference: Microsoft AI Principles
35. **Why is model explainability important in machine learning?**
    - A. It improves the model's accuracy during training.
    - B. It ensures that stakeholders understand the model's decisions.
    - C. It reduces the need for large datasets.
    - D. It simplifies the deployment process.

    Answer: B
    Explanation: Model explainability helps stakeholders understand and trust the model by revealing how it makes decisions.
    Reference: Model Explainability in Azure ML
36. **Which machine learning task is used to assign data points to predefined categories?**
    - A. Clustering
    - B. Classification
    - C. Regression
    - D. Anomaly Detection

    Answer: B
    Explanation: Classification assigns data points to predefined categories, such as predicting whether an email is spam or not.
    Reference: Classification Overview
37. **How does Azure Form Recognizer help automate business workflows?**
    - A. By generating conversational bots for customer service
    - B. By extracting structured data from unstructured documents
    - C. By performing sentiment analysis on customer feedback
    - D. By detecting anomalies in time-series data

    Answer: B
    Explanation: Form Recognizer extracts key-value pairs, text, and table data from invoices, forms, and other documents.
    Reference: Form Recognizer Overview
38. **Which Microsoft AI principle ensures the secure handling of user data?**
    - A. Accountability
    - B. Privacy and Security
    - C. Fairness
    - D. Inclusiveness

    Answer: B
    Explanation: Privacy and Security ensure compliance with data protection

laws and safeguard user information.
Reference: Microsoft Responsible AI Principles

39. **Which Azure Cognitive Service provides text-to-speech capabilities?**
    - A. Azure Bot Service
    - B. Translator Text
    - C. Speech-to-Text
    - D. Speech Synthesis

    Answer: D
    Explanation: Speech Synthesis converts written text into spoken language using Azure Cognitive Services.
    Reference: Speech Synthesis Overview
40. **What is the main goal of anomaly detection in machine learning?**
    - A. Grouping similar data points
    - B. Identifying patterns in unstructured data
    - C. Detecting data points that deviate significantly from the norm
    - D. Classifying data into predefined categories

    Answer: C
    Explanation: Anomaly detection identifies outliers or unusual patterns in data that deviate from expected behavior.
    Reference: Anomaly Detection Overview

Q41–Q55

41. **Which Azure Cognitive Service identifies objects in an image and provides their bounding box locations?**
    - A. Form Recognizer
    - B. Custom Vision
    - C. Computer Vision
    - D. Text Analytics

    Answer: C
    Explanation: Computer Vision detects objects in images and provides their bounding box coordinates.
    Reference: Computer Vision Overview
42. **What is an application of automated machine learning in Azure?**
    - A. Manually tuning hyperparameters
    - B. Automatically selecting the best algorithm for a given dataset
    - C. Manually splitting datasets for training and testing
    - D. Designing custom models without any framework

    Answer: B
    Explanation: Automated ML in Azure selects the best algorithm and tunes hyperparameters automatically.
    Reference: Automated ML Overview
43. **What is the purpose of feature engineering in machine learning?**
    - A. To simplify model deployment
    - B. To create meaningful input variables from raw data
    - C. To group data points into clusters

- D. To reduce the size of the dataset
  Answer: B
  Explanation: Feature engineering transforms raw data into features that improve model performance.
  Reference: Feature Engineering Overview

44. **Why are labeled datasets critical for supervised learning?**
    - A. They allow the model to learn the relationship between inputs and outputs.
    - B. They help detect anomalies in the data.
    - C. They are required for clustering algorithms.
    - D. They ensure data normalization.
      Answer: A
      Explanation: Supervised learning uses labeled datasets to train models to predict specific outputs.
      Reference: Supervised Learning Overview
45. **Which service is used to predict a user's intent from natural language input?**
    - A. QnA Maker
    - B. Language Understanding (LUIS)
    - C. Translator Text
    - D. Text Analytics
      Answer: B
      Explanation: LUIS predicts user intent by analyzing natural language inputs.
      Reference: LUIS Overview

Q46–Q55

46. **What is predictive analytics commonly used for?**
    - A. Detecting anomalies in real-time data
    - B. Predicting future outcomes based on historical data
    - C. Grouping similar data points into clusters
    - D. Translating text between multiple languages
      Answer: B
      Explanation: Predictive analytics uses machine learning models to forecast future outcomes based on patterns in historical data.
      Reference: Predictive Analytics Overview
47. **Which Azure Cognitive Service extracts key-value pairs and table data from forms?**
    - A. Computer Vision
    - B. Form Recognizer
    - C. Text Analytics
    - D. QnA Maker
      Answer: B
      Explanation: Form Recognizer is designed to process forms and extract structured data such as key-value pairs and tables.
      Reference: Form Recognizer Overview
48. **What is a knowledge base in the context of conversational AI?**
    - A. A repository of intents and utterances for training machine learning models
    - B. A collection of FAQs and structured data for providing automated answers
    - C. A set of rules for chatbot behavior

- D. A translation service for conversational language
  Answer: B
  Explanation: A knowledge base in conversational AI typically contains FAQs and other structured content to power automated responses.
  Reference: QnA Maker Knowledge Base

49. **What is the primary purpose of Azure Cognitive Services?**
    - A. To provide machine learning algorithms for model training
    - B. To integrate prebuilt AI capabilities into applications
    - C. To create and deploy custom machine learning pipelines
    - D. To enable high-performance GPU-based computations
      Answer: B
      Explanation: Azure Cognitive Services provide prebuilt AI tools for vision, speech, language, and decision-making capabilities.
      Reference: Azure Cognitive Services Overview
50. **What is model evaluation in machine learning?**
    - A. The process of selecting the best algorithm for a dataset
    - B. Assessing how well the model performs on unseen data
    - C. Splitting data into training and validation sets
    - D. Tuning hyperparameters for better performance
      Answer: B
      Explanation: Model evaluation tests a machine learning model's performance using metrics like accuracy, precision, and recall.
      Reference: Model Evaluation Overview
51. **What is the purpose of deploying a machine learning model in Azure?**
    - A. To monitor real-time data trends
    - B. To make the model accessible via endpoints for real-time or batch predictions
    - C. To retrain the model automatically on new data
    - D. To integrate the model with IoT devices
      Answer: B
      Explanation: Deployment makes machine learning models accessible through endpoints for inference and predictions.
      Reference: Model Deployment in Azure
52. **Which machine learning workload is typically used to segment customers into distinct groups?**
    - A. Regression
    - B. Clustering
    - C. Classification
    - D. Anomaly Detection
      Answer: B
      Explanation: Clustering groups customers with similar attributes into distinct segments for targeted strategies.
      Reference: Clustering Overview
53. **What is a key advantage of using clustering algorithms?**
    - A. They require labeled data for training.
    - B. They group data points based on similarities without predefined labels.
    - C. They improve the accuracy of classification tasks.

- D. They automate feature selection for models.
  Answer: B
  Explanation: Clustering identifies groups within unlabeled data based on shared characteristics.
  Reference: Clustering Algorithms

54. **What role does Computer Vision play in image analysis?**
    - A. It identifies anomalies in numerical data.
    - B. It translates text extracted from images.
    - C. It processes images to detect objects and analyze their attributes.
    - D. It generates spoken descriptions of visual content.
      Answer: C
      Explanation: Computer Vision detects objects, analyzes visual features, and extracts information from images.
      Reference: Computer Vision Overview
55. **Which scenarios are examples of conversational AI applications?**
    - A. A chatbot for customer support and a smart home assistant
    - B. Sentiment analysis and key phrase extraction
    - C. Face detection and object detection
    - D. Predictive maintenance and anomaly detection
      Answer: A
      Explanation: Conversational AI includes chatbots and smart assistants that interact using natural language.
      Reference: Conversational AI Workloads