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# Microsoft Azure AI Fundamentals

## Microsoft AI-900

## Version Demo

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# Topic Break Down

| Topic | No. of Questions |
|---|---|
| Topic 2, New Update | 94 |
| Topic 3, Describe Artificial Intelligence workloads and considerations | 23 |
| Topic 4, Describe fundamental principles of machine learning on Azure | 41 |
| Topic 5, Describe features of computer vision workloads on Azure | 20 |
| Topic 6, Describe features of Natural Language Processing (NLP) workloads on Azure | 27 |
| Topic 7, Describe features of conversational AI workloads on Azure | 19 |
| Total | 224 |

## QUESTION NO: 1 - (DRAG DROP)

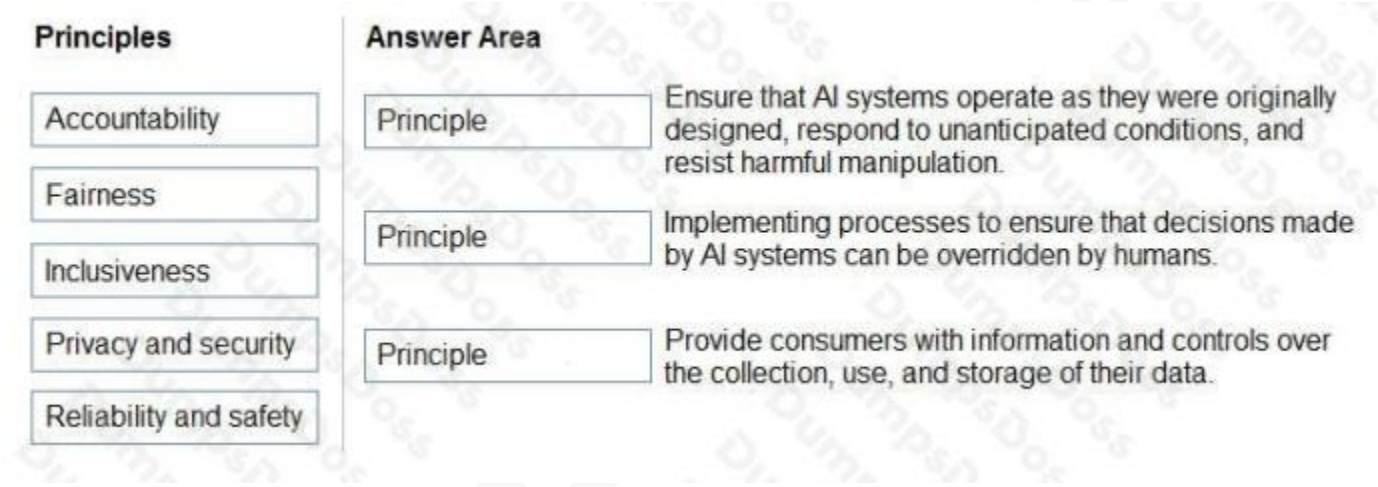
DRAG DROP

Match the Microsoft guiding principles for responsible AI to the appropriate descriptions.

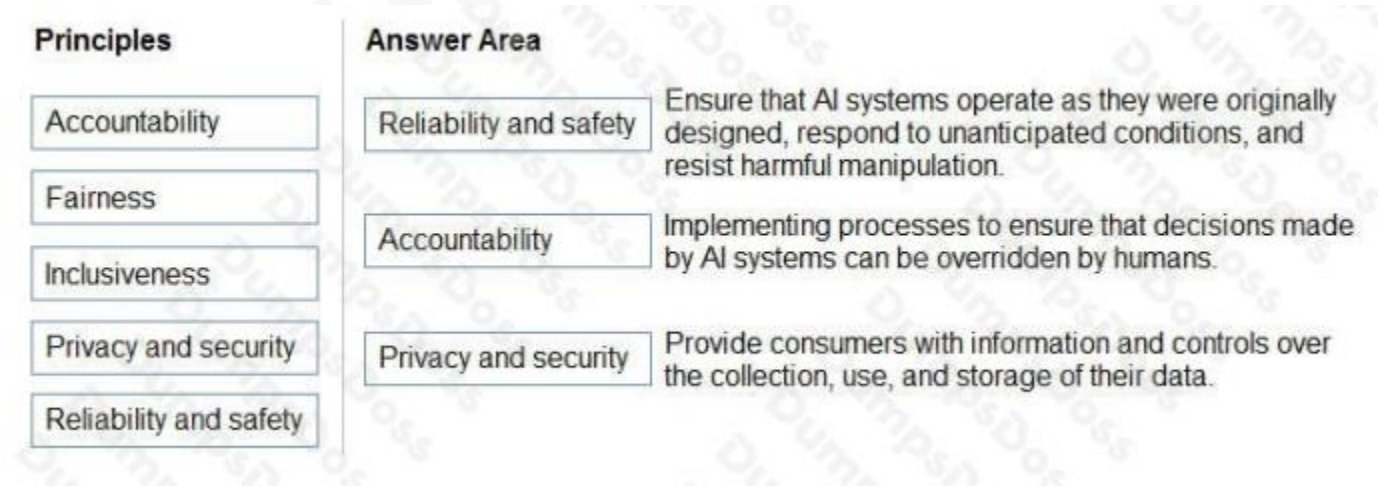
To answer, drag the appropriate principle from the column on the left to its description on the right. Each principle may be used once, more than once, or not at all.

NOTE: Each correct selection is worth one point.

**Select and Place:**




**ANSWER:**




**Explanation:**

Box 1: Reliability and safety

To build trust, it's critical that AI systems operate reliably, safely, and consistently under normal circumstances and in unexpected conditions. These systems should be able to operate as they were originally designed, respond safely to unanticipated conditions, and resist harmful manipulation.

Box 2: Accountability

The people who design and deploy AI systems must be accountable for how their systems operate. Organizations should draw upon industry standards to develop accountability norms. These norms can ensure that AI systems are not the final authority on any decision that impacts people's lives and that humans maintain meaningful control over otherwise highly autonomous AI systems.

Box 3: Privacy and security

As AI becomes more prevalent, protecting privacy and securing important personal and business information is becoming more critical and complex. With AI, privacy and data security issues require especially close attention because access to data is essential for AI systems to make accurate and informed predictions and decisions about people. AI systems must comply with privacy laws that require transparency about the collection, use, and storage of data and mandate that consumers have appropriate controls to choose how their data is used

Reference:

https://docs.microsoft.com/en-us/learn/modules/responsible-ai-principles/4-guiding-principles

## QUESTION NO: 2

In which two scenarios can you use the Form Recognizer service? Each correct answer presents a complete solution.

NOTE: Each correct selection is worth one point.

**A.** Extract the invoice number from an invoice.

**B.** Translate a form from French to English.

**C.** Find image of product in a catalog.

**D.** Identity the retailer from a receipt.

## ANSWER: A D

**Explanation:**

Reference:

https://azure.microsoft.com/en-gb/services/cognitive-services/form-recognizer/#features

## QUESTION NO: 3

You run a charity event that involves posting photos of people wearing sunglasses on Twitter.

You need to ensure that you only retweet photos that meet the following requirements:

- Include one or more faces.
- Contain at least one person wearing sunglasses.

What should you use to analyze the images?

**A.** the Verify operation in the Face service

**B.** the Detect operation in the Face service

**C.** the Describe Image operation in the Computer Vision service

**D.** the Analyze Image operation in the Computer Vision service

**ANSWER: B**

**Explanation:**

Reference:

https://docs.microsoft.com/en-us/azure/cognitive-services/face/overview

## QUESTION NO: 4

Which two scenarios are examples of a conversational AI workload? Each correct answer presents a complete solution.

NOTE: Each correct selection is worth one point.

**A.** a telephone answering service that has a pre-recorder message

**B.** a chatbot that provides users with the ability to find answers on a website by themselves

**C.** telephone voice menus to reduce the load on human resources

**D.** a service that creates frequently asked questions (FAQ) documents by crawling public websites

**ANSWER: B C**

**Explanation:**

B: A bot is an automated software program designed to perform a particular task. Think of it as a robot without a body.

C: Automated customer interaction is essential to a business of any size. In fact, 61% of consumers prefer to communicate via speech, and most of them prefer self-service. Because customer satisfaction is a priority for all businesses, self-service is a critical facet of any customer-facing communications strategy.

Incorrect Answers:

D: Early bots were comparatively simple, handling repetitive and voluminous tasks with relatively straightforward algorithmic logic. An example would be web crawlers used by search engines to automatically explore and catalog web content.

Reference: https://docs.microsoft.com/en-us/azure/architecture/data-guide/big-data/ai-overview
https://docs.microsoft.com/en-us/azure/architecture/solution-ideas/articles/interactive-voice-response-bot

## QUESTION NO: 5

For a machine learning progress, how should you split data for training and evaluation?

**A.** Use features for training and labels for evaluation.

**B.** Randomly split the data into rows for training and rows for evaluation.

**C.** Use labels for training and features for evaluation.

**D.** Randomly split the data into columns for training and columns for evaluation.

## ANSWER: B

**Explanation:**

The Split Data module is particularly useful when you need to separate data into training and testing sets. Use the Split Rows option if you want to divide the data into two parts. You can specify the percentage of data to put in each split, but by default, the data is divided 50-50. You can also randomize the selection of rows in each group, and use stratified sampling.

Reference: https://docs.microsoft.com/en-us/azure/machine-learning/studio-module-reference/split-data

## QUESTION NO: 6

You are building a knowledge base by using QnA Maker.

Which file format can you use to populate the knowledge base?

**A.** PPTX

**B.** XML

**C.** ZIP

**D.** PDF

## ANSWER: D

**Explanation:**

D: Content types of documents you can add to a knowledge base:

Content types include many standard structured documents such as PDF, DOC, and TXT.

Note: The tool supports the following file formats for ingestion:

- .tsv: QnA contained in the format Question(tab)Answer.
- .txt, .docx, .pdf: QnA contained as regular FAQ content--that is, a sequence of questions and answers.

Incorrect Answers:

A: PPTX is the default presentation file format for new PowerPoint presentations. B: It is not possible to ingest xml file directly.

Reference: https://docs.microsoft.com/en-us/azure/cognitive-services/qnamaker/concepts/data-sources-and-content

## QUESTION NO: 7 - (DRAG DROP)

Match the Azure Cognitive Services service to the appropriate actions.

To answer, drag the appropriate service from the column on the left to its action on the right. Each service may he used once, more than once, or not at all.

NOTE: Each correct match is worth one point.


## ANSWER:


**Explanation:**


## QUESTION NO: 8 - (HOTSPOT)

HOTSPOT

For each of the following statements, select Yes if the statement is true. Otherwise, select No.

NOTE: Each correct selection is worth one point.

**Hot Area:**

**Answer Area**

| Statements | Yes | No |
|---|---|---|
| Automated machine learning is the process of automating the time-consuming, iterative tasks of machine learning model development. | ○ | ○ |
| Automated machine learning can automatically infer the training data from the use case provided. | ○ | ○ |
| Automated machine learning works by running multiple training iterations that are scored and ranked by the metrics you specify. | ○ | ○ |
| Automated machine learning enables you to specify a dataset and will automatically understand which label to predict. | ○ | ○ |

**ANSWER:**

**Answer Area**

| Statements | Yes | No |
|---|---|---|
| Automated machine learning is the process of automating the time-consuming, iterative tasks of machine learning model development. | ○ | ○ |
| Automated machine learning can automatically infer the training data from the use case provided. | ○ | ○ |
| Automated machine learning works by running multiple training iterations that are scored and ranked by the metrics you specify. | ○ | ○ |
| Automated machine learning enables you to specify a dataset and will automatically understand which label to predict. | ○ | ○ |

**Explanation:**

Box 1: Yes

Automated machine learning, also referred to as automated ML or AutoML, is the process of automating the time consuming, iterative tasks of machine learning model development. It allows data scientists, analysts, and developers to build ML models with high scale, efficiency, and productivity all while sustaining model quality. Box 2: No

Box 3: Yes

During training, Azure Machine Learning creates a number of pipelines in parallel that try different algorithms and parameters for you. The service iterates through ML algorithms paired with feature selections, where each iteration produces a model with a training score. The higher the score, the better the model is considered to "fit" your data. It will stop once it hits the exit criteria defined in the experiment.

Box 4: No

Apply automated ML when you want Azure Machine Learning to train and tune a model for you using the target metric you specify. The label is the column you want to predict.

Reference: https://azure.microsoft.com/en-us/services/machine-learning/automatedml/#features

## QUESTION NO: 9

You need to provide content for a business chatbot that will help answer simple user queries.

What are three ways to create question and answer text by using QnA Maker? Each correct answer presents a complete solution.

NOTE: Each correct selection is worth one point.

**A.** Generate the questions and answers from an existing webpage.

**B.** Use automated machine learning to train a model based on a file that contains the questions.

**C.** Manually enter the questions and answers.

**D.** Connect the bot to the Cortana channel and ask questions by using Cortana.

**E.** Import chit-chat content from a predefined data source.

## ANSWER: A C E

**Explanation:**

Automatic extraction

Extract question-answer pairs from semi-structured content, including FAQ pages, support websites, excel files, SharePoint documents, product manuals and policies.

Reference:

https://docs.microsoft.com/en-us/azure/cognitive-services/qnamaker/concepts/content-types

## QUESTION NO: 10

You have the process shown in the following exhibit.


Which type of AI solution is shown in the diagram?

**A.** a sentiment analysis solution

**B.** a chatbot

**C.** a machine learning model

**D.** a computer vision application

**ANSWER: B**

## QUESTION NO: 11

Which two scenarios are examples of a conversational AI workload? Each correct answer presents a complete solution.

NOTE: Each correct selection is worth one point.

**A.** a smart device in the home that responds to questions such as “What will the weather be like today?”

**B.** a website that uses a knowledge base to interactively respond to users’ questions

**C.** assembly line machinery that autonomously inserts headlamps into cars

**D.** monitoring the temperature of machinery to turn on a fan when the temperature reaches a specific threshold

**ANSWER: A B**

## QUESTION NO: 12 - (HOTSPOT)

HOTSPOT

For each of the following statements, select Yes if the statement is true. Otherwise, select No.

NOTE: Each correct selection is worth one point.

**Hot Area:**

**Answer Area**

| Statements | Yes | No |
|---|---|---|
| Providing an explanation of the outcome of a credit loan application is an example of the Microsoft transparency principle for responsible AI. | ○ | ○ |
| A triage bot that prioritizes insurance claims based on injuries is an example of the Microsoft reliability and safety principle for responsible AI. | ○ | ○ |
| An AI solution that is offered at different prices for different sales territories is an example of the Microsoft inclusiveness principle for responsible AI. | ○ | ○ |

**ANSWER:**

**Answer Area**

| Statements | Yes | No |
|---|---|---|
| Providing an explanation of the outcome of a credit loan application is an example of the Microsoft transparency principle for responsible AI. | ○ | ○ |
| A triage bot that prioritizes insurance claims based on injuries is an example of the Microsoft reliability and safety principle for responsible AI. | ○ | ○ |
| An AI solution that is offered at different prices for different sales territories is an example of the Microsoft inclusiveness principle for responsible AI. | ○ | ○ |

**Explanation:**

Box 1: Yes

Achieving transparency helps the team to understand the data and algorithms used to train the model, what transformation logic was applied to the data, the final model generated, and its associated assets. This information offers insights about how the model was created, which allows it to be reproduced in a transparent way.

Box 2: No

A data holder is obligated to protect the data in an AI system, and privacy and security are an integral part of this system. Personal needs to be secured, and it should be accessed in a way that doesn't compromise an individual's privacy.

Box 3: No

Inclusiveness mandates that AI should consider all human races and experiences, and inclusive design practices can help developers to understand and address potential barriers that could unintentionally exclude people. Where possible, speech-

to-text, text-to-speech, and visual recognition technology should be used to empower people with hearing, visual, and other impairments.

Reference:

https://docs.microsoft.com/en-us/azure/cloud-adoption-framework/innovate/best-practices/trusted-ai

## QUESTION NO: 13

What are three Microsoft guiding principles for responsible AI? Each correct answer presents a complete solution.

NOTE: Each correct selection is worth one point.

**A.** knowledgeability

**B.** decisiveness

**C.** inclusiveness

**D.** fairness

**E.** opinionatedness

**F.** reliability and safety

## ANSWER: C D F

**Explanation:**

Reference: https://docs.microsoft.com/en-us/learn/modules/responsible-ai-principles/4-guiding-principles

## QUESTION NO: 14

You are developing a chatbot solution in Azure.

Which service should you use to determine a user's intent?

**A.** Translator

**B.** QnA Maker

**C.** Speech

**D.** Language Understanding (LUIS)

## ANSWER: D

**Explanation:**

Language Understanding (LUIS) is a cloud-based API service that applies custom machine-learning intelligence to a user's conversational, natural language text to predict overall meaning, and pull out relevant, detailed information.

Design your LUIS model with categories of user intentions called intents. Each intent needs examples of user utterances. Each utterance can provide data that needs to be extracted with machine-learning entities.

Reference:

https://docs.microsoft.com/en-us/azure/cognitive-services/luis/what-is-luis

## QUESTION NO: 15 - (SIMULATION)

To complete the sentence, select the appropriate option in the answer area.

Computer vision capabilities can be Deployed to……..

## ANSWER: seetheanswerinbelowExplanation

**Explanation:**

Integrate a facial recognition feature into an app.