**AI Fundamentals**

**Skills at a glance**

* Describe Artificial Intelligence workloads and considerations (15–20%)
* Describe fundamental principles of machine learning on Azure (15–20%)
* Describe features of computer vision workloads on Azure (15–20%)
* Describe features of Natural Language Processing (NLP) workloads on Azure (15–20%)
* Describe features of generative AI workloads on Azure (20–25%)

**Describe Artificial Intelligence workloads and considerations (15–20%)**

**Identify features of common AI workloads**

* Identify computer vision workloads
* Identify natural language processing workloads
* Identify document processing workloads
* Identify features of generative AI workloads

**Identify guiding principles for responsible AI**

* Describe considerations for fairness in an AI solution
* Describe considerations for reliability and safety in an AI solution
* Describe considerations for privacy and security in an AI solution
* Describe considerations for inclusiveness in an AI solution
* Describe considerations for transparency in an AI solution
* Describe considerations for accountability in an AI solution

**Describe fundamental principles of machine learning on Azure (15-20%)**

**Identify common machine learning techniques**

* Identify regression machine learning scenarios
* Identify classification machine learning scenarios
* Identify clustering machine learning scenarios
* Identify features of deep learning techniques
* Identify features of the Transformer architecture

**Describe core machine learning concepts**

* Identify features and labels in a dataset for machine learning
* Describe how training and validation datasets are used in machine learning

**Describe Azure Machine Learning capabilities**

* Describe capabilities of automated machine learning
* Describe data and compute services for data science and machine learning
* Describe model management and deployment capabilities in Azure Machine Learning

**Describe features of computer vision workloads on Azure (15–20%)**

**Identify common types of computer vision solution**

* Identify features of image classification solutions
* Identify features of object detection solutions
* Identify features of optical character recognition solutions
* Identify features of facial detection and facial analysis solutions

**Identify Azure tools and services for computer vision tasks**

* Describe capabilities of the Azure AI Vision service
* Describe capabilities of the Azure AI Face detection service

**Describe features of Natural Language Processing (NLP) workloads on Azure (15–20%)**

**Identify features of common NLP Workload Scenarios**

* Identify features and uses for key phrase extraction
* Identify features and uses for entity recognition
* Identify features and uses for sentiment analysis
* Identify features and uses for language modeling
* Identify features and uses for speech recognition and synthesis
* Identify features and uses for translation

**Identify Azure tools and services for NLP workloads**

* Describe capabilities of the Azure AI Language service
* Describe capabilities of the Azure AI Speech service

**Describe features of generative AI workloads on Azure (20–25%)**

**Identify features of generative AI solutions**

* Identify features of generative AI models
* Identify common scenarios for generative AI
* Identify responsible AI considerations for generative AI

**Identify generative AI services and capabilities in Microsoft Azure**

* Describe features and capabilities of Azure AI Foundry
* Describe features and capabilities of Azure OpenAI service
* Describe features and capabilities of Azure AI Foundry model catalog