Comprehensive Keras Quiz

This quiz tests your knowledge of Keras, covering model building, APIs, deployment, and advanced usage.

Question 1: Which of the following is the simplest way to build a Keras model?

A. Sequential API

B. Functional API

C. Model subclassing

D. TensorFlow Serving

Question 2: Which of the following are valid ways to add layers to a Sequential model?

A. Passing a list of layers during initialization

B. Using the add() method

C. Using the compile() method

D. Using the fit() method

Question 3: What is the purpose of the compile() method in Keras?

A. To configure the model for training

B. To add layers to the model

C. To make predictions

D. To save the model

Question 4: Which Keras API allows you to build models with arbitrary architectures, including multiple inputs and outputs?

A. Sequential API

B. Functional API

C. Model subclassing

D. TensorFlow Lite

Question 5: What is the main advantage of model subclassing in Keras?

A. It is the simplest way to build models

B. It allows complete flexibility to define custom behavior

C. It automatically compiles the model

D. It is used only for deploying models

Question 6: Which of the following are built-in Keras training and evaluation methods?

A. fit()

B. evaluate()

C. predict()

D. convert()

Question 7: Which TensorFlow framework is recommended for deploying Keras models on smartphones and embedded devices?

A. TensorFlow Serving

B. TensorFlow Lite

C. TensorFlow.js

D. TensorFlow Hub

Question 8: What is the purpose of TensorFlow Serving?

A. To convert Keras models to TensorFlow Lite format

B. To deploy models as REST APIs on servers or cloud

C. To build models with the Functional API

D. To train models using GradientTape

Question 9: Name the three main APIs for building Keras models.

Answer space: _____

Question 10: What Keras class do you inherit from to create a custom layer?

Answer space: _____

Question 11: Which activation function is commonly used in the output layer for multi-class classification?

A. ReLU

B. Sigmoid

C. Softmax

D. Tanh

Question 12: Which of the following are true about the Keras Sequential model?

A. It stacks layers linearly

B. It supports multiple inputs and outputs

C. It can be built incrementally using add()

D. It requires subclassing to use

Question 13: What is the role of the GradientTape in Keras?

A. To automatically compute gradients for custom training loops

B. To compile the model

C. To save the model

D. To convert models to TensorFlow Lite

Question 14: Explain the principle of progressive disclosure of complexity in the design of the Keras API.

Answer space: _____

Question 15: Which method is used to train a Keras model using built-in training loops?

A. compile()

B. fit()

C. evaluate()

D. predict()

Question 16: What is the main benefit of using the Functional API over the Sequential API?

A. Simpler syntax

B. Ability to build models with complex architectures

C. Faster training

D. Automatic deployment

Question 17: Which of the following are true about deploying Keras models in the browser?

A. You can import saved Keras models into TensorFlow.js

B. TensorFlow Lite is used for browser deployment

C. Models can be queried as part of JavaScript apps

D. Electron apps can use Keras models via TensorFlow.js

Question 18: What is the purpose of the evaluate() method in Keras?

Answer space: _____

Question 19: Which of the following is NOT a typical use case for Keras?

A. Computer vision

B. Time series forecasting

C. Natural language processing

D. Operating system development

Question 20: Describe how Keras supports both beginner and expert users through its API design.

Answer space: _____