Mock Practice Test

Dated-23rd May 2025

Course : AI – ML

Section A: Multiple Choice Sections

Multiple choice questions

1. Which Python library is used for numerical computations and array operations?

* a) Pandas
* b) NumPy
* c) Matplotlib
* d) TensorFlow

1. Which function is used to split data into training and testing sets in Scikit-learn?

* a) train\_split()
* b) split\_data()
* c) train\_test\_split()
* d) data\_split()

1. Which evaluation metric is best for imbalanced classification problems?

* a) Accuracy
* b) F1 Score
* c) Mean Squared Error
* d) R-Squared

1. What is the purpose of fit() in Scikit-learn?

* a) It fits your data on a plot
* b) It trains the model
* c) It splits data
* d) It normalizes data

1. Which Pandas function is used to read a CSV file?

* a) read\_excel()
* b) read\_csv()
* c) load\_csv()
* d) import\_csv()

1. **Which neural network is best for sequence or time-series data?**  
   a) CNN  
   b) ANN  
   c) RNN  
   d) DBN
2. **What is the vanishing gradient problem?**  
   a) When gradients explode during training  
   b) When gradients become very small and training stalls  
   c) When there is no error in prediction  
   d) When output is always zero
3. **What happens during the backpropagation process?**  
   a) Weights are initialized  
   b) Activation functions are chosen  
   c) Errors are propagated backward to update weights  
   d) Training data is shuffled
4. **Which type of neural network is best suited for image recognition tasks?**  
   a) Recurrent Neural Network (RNN)  
   b) Convolutional Neural Network (CNN)  
   c) Feedforward Neural Network (FNN)  
   d) Generative Adversarial Network (GAN)
5. **What is the purpose of an activation function in a neural network?**  
   a) Normalize input values  
   b) Control the learning rate  
   c) Introduce non-linearity  
   d) Reduce training time
6. Which of the following is used to evaluate a classification model? [ Select all valid]
7. mean\_squared\_error
8. r2\_score
9. accuracy\_score
10. confusion\_matrix\_score
11. Which method is used to make predictions with a trained Scikit-learn model?

* a) transform()
* b) predict()
* c) fit()
* d) split()

1. Which Scikit-learn module is used to evaluate models?

* a) sklearn.metrics
* b) sklearn.preprocessing
* c) sklearn.pipeline
* d) sklearn.datasets

1. Which Scikit-learn class is used for standardizing features?

* a) Normalizer
* b) MinMaxScaler
* c) StandardScaler
* d) FeatureUnion

1. Which method can be used to get the confusion matrix?

* a) confusion()
* b) confusion\_matrix()
* c) confusion\_score()
* d) matrix\_score()

1. Precsion can be defined as………………………………………………
2. Recall can be defined as…………………………………………………………
3. F2 can be defined as…………………………………………………………..
4. Which data structure is primarily used in the Pandas library?

* a) Array
* b) DataFrame
* c) List
* d) Tuple

1. Which method is used to get the first 5 rows of a DataFrame?

* a) df.top()
* b) df.first()
* c) df.head()
* d) df.sample()

1. How can you select a column named 'Age' from a DataFrame 'df'?

* a) df.Age
* b) df['Age']
* c) df.loc[:, 'Age']
* d) All of the above

1. Which function removes missing values from a DataFrame?

* a) fillna()
* b) dropna()
* c) remove\_na()
* d) delete\_na()

1. Which method is used to get summary statistics of a DataFrame?

* a) describe()
* b) summary()
* c) info()
* d) value\_counts()

1. Which method can be used to rename columns in a DataFrame?

* a) change\_columns()
* b) df.rename()
* c) df.set\_columns()
* d) rename\_columns()

1. Which function is used to combine two DataFrames horizontally (side by side)?

* a) pd.append()
* b) pd.concat(axis=1)
* c) pd.merge()
* d) pd.join()

Section B:[Descriptive – Theory Part]

# **Questions [Attempt 5 out of 6 questions]**

1. Identify and explain - Machine learning types , with a example?
2. Explain Chunking and Chinking ?
3. Explain Stemming and Lemmatization ?
4. Explain Differentiate - Regression and classification and vectorization ?
5. Explain - Word Embeddings - Word2vec , Continuous BOW , Continuous Skip-gram?
6. Differentiate between - Recurrent Neural Networks (RNNs) , Long-Short-Term-Memory Networks (LSTM) , Gated Recurrent Unit Networks

Section C:[Practical – Development- Programming Part]

# **Questions [Attempt 5 out of 6 questions]**

1. Machine learning – apply SK-LEARN - logistic regression

<https://github.com/sukhijapiyush/Logistic-Regression/blob/main/heart.csv>

Train, predict and check accuracy with different metrics

1. This is zameen.com real estate data.

<https://github.com/ShahzadSarwar10/AI-ML-Explorer/blob/main/RealEstate-Zameen-Dataset/zameencom-property-data-By-Kaggle.csv>

Load data via Pandas

Apply pivot function to filter DataFrame

Apply a query

Select 2 column

Select 3, 4 , 5 columns

Select 3 to 6 columns

Call info and describe method and analyze.

1. Kindly write “Simple Feed forward Neural Networks Example Code” fashion\_mnist in Keras.

Train model and measure accuracy with different metric.

1. Kindly write – Neutral network - 1D Convolutional –CNN - For New Classification. Loads the Reuters newswire classification dataset from Keras. Train model and measure accuracy with different metric.
2. Kindly write – Neutral network - 2D Convolutional –CNN - For Image Classification. CIFAR100 dataset from Keras.Train model and measure accuracy with different metric.
3. Write a LongShortTerm-Memory-LSTM and GatedRecurrentUnitNetworks – for Reuters newswire classification dataset – from keras

Train model and measure accuracy with different metric.