100 - Practice Questions

Q1. What will be the output of `len([10, 20, 30])`?
A) 2
B) 3 ✓
C) 4
D) Error

Q2. Which method is used to add an element at the end of a list?
A) append() ✓
B) add()
C) extend()
D) insert()

Q3. What will `list(range(2, 8, 2))` return?
A) [2, 4, 6, 8]
B) [2, 4, 6] ✓
C) [4, 6, 8]
D) Error

Q4. Which operation removes and returns the last element from a list?
A) pop() ✓
B) remove()
C) del
D) cut()

Q5. What is the output of:

```
a = [1, 2, 3]
a[1] = 10
print(a)
```

A) [1, 10, 3] ✓
B) [1, 2, 3]
C) Error
D) [10, 2, 3]

Q6. Which method merges two lists in-place?
A) merge()
B) extend() ✓
C) append()
D) join()

Q7. What is the result of `[1, 2] * 2`?
A) [1, 2, 1, 2] ✓
B) [2, 4]
C) [1, 2, 2, 4]
D) Error

Q8. Which method removes the first occurrence of an item?
A) delete()
B) pop()
C) remove() ✓
D) discard()

Q9. What does `min([3, 1, 4])` return?
A) 1 ✓
B) 3
C) 4
D) Error

Q10. Which statement creates a list with 5 zeros?
A) `[0]*5` ✓
B) `[0:5]`
C) list(0,5)
D) zeros(5)

Q11. Which of these creates a shallow copy of a list?
A) list.copy()
B) list[:]
C) copy.copy(list)
D) All of the above ✓

Q12. What is the output of:

```
a = [1, 2, 3]
print(a[::-1])
```

A) [3, 2, 1] ✓
B) [1, 2, 3]
C) Error
D) None

Q13. Which operator checks if an element exists in a list?
A) in ✓
B) has
C) exist
D) contain

Section 2 – Tuples (12 Questions)

Q14. Which of these is a tuple?
A) (1, 2, 3) ✓
B) [1, 2, 3]
C) {1, 2, 3}
D) tuple(1, 2, 3)

Q15. Tuples are:
A) Mutable
B) Immutable ✓
C) Partially mutable
D) None

Q16. What is the output of `(1,)`?
A) int
B) tuple with one element ✓
C) list
D) Error

Q17. How do you concatenate tuples?
A) + ✓
B) append()
C) extend()
D) join()

Q18. What will `(1, 2) * 2` return?
A) (1, 2, 1, 2) ✓
B) (2, 4)
C) (1, 2, 2, 4)
D) Error

Q19. Which function returns the length of a tuple?
A) length()
B) len() ✓
C) size()
D) count()

Q20. What is the output of:

```
python
CopyEdit
t = (10, 20, 30)
print(t[1])
```

A) 10
B) 20 ✓
C) 30
D) Error

Q21. Can a tuple contain mutable elements?
A) Yes ✓
B) No
C) Only strings
D) Only numbers

Q22. Which method counts occurrences of an element in a tuple?
A) count() ✓
B) index()
C) find()
D) search()

Q23. How to get index of an element in a tuple?
A) index() ✓
B) find()
C) position()
D) locate()

Q24. Which of these will create an empty tuple?
A) ()
B) tuple()
C) Both A and B ✓
D) None

Q25. What is the output of:

```
tuple("abc")
```

A) ('a', 'b', 'c') ✓
B) ['a', 'b', 'c']
C) "abc"
D) Error

Section 3 – Sets (12 Questions)

Q26. Which is a valid set creation?
A) {1, 2, 3} ✓
B) set[1, 2, 3]

C) [1, 2, 3]
D) (1, 2, 3)

Q27. Sets are:
A) Ordered
B) Unordered ✓
C) Indexed
D) Immutable

Q28. Which removes an element if it exists without error?
A) remove()
B) discard() ✓
C) pop()
D) delete()

Q29. What is `{1, 2, 3} | {3, 4}`?
A) {1, 2, 3, 4} ✓
B) {3}
C) {1, 2, 4}
D) Error

Q30. Intersection of `{1, 2}` and `{2, 3}` is:
A) {2} ✓
B) {1, 2, 3}
C) {}
D) None

Q31. Difference `{1, 2} - {2, 3}` is:
A) {1} ✓
B) {2}
C) {3}
D) None

Q32. Symmetric difference `{1, 2} ^ {2, 3}` is:
A) {1, 3} ✓
B) {2}
C) {1, 2, 3}
D) None

Q33. Which method adds an element to a set?
A) add() ✓
B) append()
C) push()
D) insert()

Q34. Can sets contain duplicates?
A) Yes
B) No ✓
C) Only strings
D) Only numbers

Q35. Which removes a random element?
A) pop() ✓
B) discard()
C) remove()
D) delete()

Q36. Which function checks subset relation?
A) subset()
B) issubset() ✓
C) contains()
D) in

Q37. Empty set creation:
A) set() ✓
B) {}
C) emptyset()
D) None

Section 4 – Dictionaries (12 Questions)

Q38. Which creates a dictionary?
A) {1, 2, 3}
B) {"a": 1, "b": 2} ✓
C) dict[1, 2]
D) ("a", 1)

Q39. How do you access a value by key?
A) dict.key
B) dict["key"] ✓
C) dict->key
D) dict.getvalue

Q40. Which method returns all keys?
A) keys() ✓
B) values()

C) items()
D) getkeys()

Q41. Which returns all values?
A) keys()
B) values() ✓
C) items()
D) getvalues()

Q42. Which returns key-value pairs?
A) items() ✓
B) pairs()
C) tuples()
D) entries()

Q43. What is the output of:

```
python
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d = {"a": 1}
print(d.get("b", 5))
```

A) 1
B) 5 ✓
C) None
D) Error

Q44. Which deletes a key-value pair?
A) remove()
B) pop() ✓
C) discard()
D) delitem()

Q45. Can dictionary keys be mutable?
A) Yes
B) No ✓
C) Only strings
D) Only numbers

Q46. Which merges two dictionaries in Python 3.9+?
A) merge()
B) update()
C) dict1 | dict2 ✓
D) concat()

Q47. What will:

```
python
CopyEdit
dict.fromkeys(['a','b'],0)
```

return?
A) {'a':0,'b':0} ✓
B) {'a':0,'b':None}
C) ['a','b']
D) Error

Q48. Which method removes all items?
A) delete()
B) clear() ✓
C) empty()
D) pop()

Q49. How to check if key exists?
A) in ✓
B) has
C) contains
D) exist

Section 5 – NumPy (13 Questions)

Q50. How to import NumPy with alias `np`?
A) import numpy as np ✓
B) import np
C) include numpy np
D) use numpy np

Q51. Which creates an array of zeros?
A) np.zeros() ✓
B) np.zero()
C) np.empty()
D) np.blank()

Q52. Which function creates an array with evenly spaced values?
A) np.linspace() ✓
B) np.range()
C) np.space()
D) np.fill()

Q53. Shape of array can be found using:
A) shape()
B) arr.shape ✓
C) size()
D) dim()

Q54. Which function changes array shape without changing data?
A) reshape() ✓
B) resize()
C) transpose()
D) flatten()

Q55. `np.eye(3)` creates:
A) Zero matrix
B) Identity matrix ✓
C) Random matrix
D) Error

Q56. Which gets the maximum value?
A) arr.max() ✓
B) arr.maximum()
C) max(arr)
D) np.maximum()

Q57. Which flattens a multi-dimensional array?
A) flatten() ✓
B) ravel()
C) Both A & B ✓
D) None

Q58. Which returns data type of array elements?
A) dtype ✓
B) type
C) datatype
D) gettype

Q59. Element-wise multiplication in NumPy is done with:
A) * ✓
B) dot()
C) multiply() ✓
D) Both A & C ✓

Q60. Dot product is computed using:
A) *
B) dot() ✓

C) @ ✅
D) Both B & C ✅

Q61. How to create an array from Python list?
A) np.array(list) ✅
B) np.asarray(list) ✅
C) Both A & B ✅
D) None

Q62. `np.arange(5)` returns:
A) [1 2 3 4 5]
B) [0 1 2 3 4] ✅
C) [0 1 2 3 4 5]
D) Error

Section 6 – Pandas (13 Questions)

Q63. How to import pandas as pd?
A) import pandas pd
B) import pandas as pd ✅
C) use pandas pd
D) include pandas pd

Q64. Which creates a Series?
A) pd.Series() ✅
B) pd.series()
C) pd.MakeSeries()
D) pd.DataSeries()

Q65. Which creates a DataFrame?
A) pd.DataFrame() ✅
B) pd.dataframe()
C) pd.MakeDF()
D) dataframe()

Q66. Which method reads CSV file?
A) pd.read_csv() ✅
B) pd.load_csv()
C) pd.csvread()
D) pd.get_csv()

Q67. Which method writes to CSV?
A) to_csv() ✓
B) write_csv()
C) export_csv()
D) save_csv()

Q68. Which returns first 5 rows?
A) head() ✓
B) top()
C) first()
D) start()

Q69. Which returns last 5 rows?
A) tail() ✓
B) bottom()
C) last()
D) end()

Q70. Selecting a column `df['col']` returns:
A) Series ✓
B) DataFrame
C) list
D) dict

Q71. Selecting multiple columns `df[['col1','col2']]` returns:
A) Series
B) DataFrame ✓
C) list
D) dict

Q72. `df.isnull()` returns:
A) Boolean DataFrame ✓
B) Boolean Series
C) Null values
D) Count of nulls

Q73. To drop missing values:
A) dropna() ✓
B) remove_na()
C) delete_na()
D) null_drop()

Q74. To fill missing values:
A) fillna() ✓
B) replace_na()

C) na_fill()
D) None

Q75. Which merges DataFrames by common columns?
A) merge() ✓
B) concat()
C) join()
D) combine()

Section 7 – Scikit-learn (12 Questions)

Q76. Which imports train_test_split?
A) from sklearn.model_selection import train_test_split ✓
B) import sklearn.train_test_split
C) from sklearn import split
D) None

Q77. Which module contains classification algorithms?
A) sklearn.linear_model ✓
B) sklearn.cluster
C) sklearn.datasets
D) sklearn.tree

Q78. Which loads sample datasets?
A) sklearn.data
B) sklearn.datasets ✓
C) sklearn.samples
D) sklearn.examples

Q79. Which standardizes features?
A) StandardScaler ✓
B) MinMaxScaler
C) normalize
D) fit_transform

Q80. Which is used for decision trees?
A) DecisionTreeClassifier ✓
B) TreeClassifier
C) TreeDecision
D) DTree

Q81. Which splits data into folds for cross-validation?
A) KFold ✓

B) SplitFold
C) CrossSplit
D) CVFold

Q82. To measure accuracy:
A) accuracy_score ✅
B) score_accuracy
C) calc_accuracy
D) test_accuracy

Q83. Which is for clustering?
A) KMeans ✅
B) LinearRegression
C) LogisticRegression
D) RandomForestClassifier

Q84. Logistic regression is for:
A) Classification ✅
B) Regression only
C) Clustering
D) None

Q85. Which reduces dimensionality?
A) PCA ✅
B) LDA
C) SVD
D) All of the above ✅

Q86. To save models:
A) joblib ✅
B) pickle ✅
C) Both A & B ✅
D) None

Q87. Label encoding:
A) LabelEncoder ✅
B) OneHotEncoder
C) label()
D) encode_labels

Section 8 – TensorFlow & Keras (13 Questions)

Q88. How to import TensorFlow as tf?
A) import tensorflow as tf ✓
B) import tf
C) use tensorflow tf
D) include tensorflow tf

Q89. Which API is high-level inside TensorFlow?
A) Keras ✓
B) NumPy
C) Pandas
D) Scikit-learn

Q90. Which creates a sequential model?
A) tf.keras.Sequential() ✓
B) tf.keras.sequence()
C) tf.keras.model()
D) tf.keras.makeSequential()

Q91. Which adds a dense layer?
A) Dense() ✓
B) Layer()
C) FullyConnected()
D) denseLayer()

Q92. Activation function for binary classification output:
A) sigmoid ✓
B) softmax
C) relu
D) tanh

Q93. Loss for binary classification:
A) binary_crossentropy ✓
B) categorical_crossentropy
C) mse
D) mae

Q94. Optimizer for adaptive learning rate:
A) Adam ✓
B) SGD
C) RMSprop
D) None

Q95. To compile a model:
A) compile() ✓
B) build()

C) fit()
D) run()

Q96. To train a model:
A) fit() ✓
B) train()
C) compile()
D) model()

Q97. To evaluate a model:
A) evaluate() ✓
B) test()
C) score()
D) assess()

Q98. To make predictions:
A) predict() ✓
B) forecast()
C) infer()
D) run()

Q99. Callback to stop training early:
A) EarlyStopping ✓
B) StopTrain
C) StopEarly
D) Halt

Q100. To save a model in TensorFlow/Keras:
A) save() ✓
B) store()
C) keep()
D) write()