B.Sc. Engg. (EEE), 7th Semester Date: Oct 2024

DEPARTMENT OF ELECTRICAL AND ELECTRONIC ENGINEERING

EEE 4710

Artificial Intelligence and Machine Learning

Set - A **Lab Quiz**

Name : ……. Time: 40 minutes

Student ID : ……. Full Marks: 30

Answer all the questions. All questions have equal marks.

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1. a= [10, 3, ‘john’, ‘geralt’, ‘logan’, -4, 2, ‘triss’, 655512]

   an = np.array(a)

   a(-4) = ?

   Ans:

2. What will be the output from the following commands -
   - a.shape
   - an.shape
   - a.size
   - an.size( )

   Ans:

3. Write the codes to remove the last two elements from ‘a’ and ‘an’.
   Ans:

4. Write the code to extract all the string values from the list and place them in a new list termed ‘ast’.
   Ans:

5. State the name of any 8 methods that are available in Python's list.
Ans:

6. c = (20, 50, 80, 20, 1000, 20, 20)
Write the code to find the number of times 20 appears in c.
Ans:

7. How do you convert a list to a tuple?
Ans:

8. Explain the 'alias' issue. How do you avoid it?
Ans:

9. d = "ae boe e i ilialithon, im tulithon"
Write the code to reverse the string.

Ans:

10. s = 'alicient'
s.find('i') **= ?**

Ans:

11. How do you check the number of entries in each category in a column of a dataframe?

Ans:

12. How do you define a dictionary in Python?

    Ans:

13. State the name of 10 popular Python libraries and the field they are used.
    Ans:

14. Write a function that will take a string as input and return the number of numeric values inside the string as output.

    input = “221B Baker Street”
    output = 3

    Ans:

15. Write the code to create a numpy array of shape (4,5) with random integers. Then, reshape the array to (10,2).
    Ans:

16. How do you save a dataframe object to a CSV file?

Ans:

17.

	dataset	IR	Unsampled	SMOTE	ADASYN	RUS	NC	CNN
0	wisconsin	1.86	96.41	96.39	96.90	97.36	97.89	96.68
1	yeast1	2.46	82.37	88.32	90.38	92.57	89.77	88.54
2	vehicle1	2.90	64.99	74.41	73.35	78.00	76.98	74.65
3	ecoli2	5.46	82.54	86.37	87.01	85.37	87.68	88.37
4	yeast3	8.10	82.26	89.65	90.34	91.20	89.21	89.64
5	ecoli3	8.60	70.45	82.63	77.15	86.26	74.33	76.81
6	page-blocks0	8.79	89.96	92.38	92.33	93.20	92.12	91.58
7	vowel0	9.98	75.36	87.44	81.74	93.02	79.49	94.86
8	glass2	11.59	7.07	26.56	36.56	57.40	13.77	37.30
9	glass4	15.47	71.21	83.64	83.13	86.86	70.70	82.06
10	ecoli4	15.80	82.43	87.63	87.46	89.71	82.10	90.17

For this given dataframe, write the code to extract the last 4 rows and first 3 columns.

Ans:

18. Write the code to extract the column ADASYN and create a bar plot.
Ans:

19. Write the code to extract all the column names in a list.
Ans:

20. Write the code to remove the 6th row from the dataframe object.

Ans:

21. Write the code to extract the sample points from the dataframe that have IR between 5 to 10 and score from the NC approach higher than 80.

Ans:

22. Write the code to sort the dataframe based on the score from SMOTE in descending order.

Ans:

23. Write the code to add a new feature variable called ‘avg_score’ which should contain the average values of the 4th column to the end (SMOTE to CNN).

Ans:

24. State the names of 5 color palettes available in the Seaborn library for plotting.
Ans:

25. What is the name of the input parameter that allows you to control the number of bins in a histogram plot?
Ans:

26. What is the function of the ‘hue’ parameter during plotting?
Ans:

27. X= [‘aemon’, ‘aegon’, ‘daemon’, ‘aemond’, ‘aneys’, ‘aerys’, ‘daeron’]

From the given list, extract only those names that start with ‘a’.

Ans:

28. Write the code to create a Python class called ‘Anaconda’.
    - It will have 3 properties – length, color, and weight.
    - 1 method - ‘bite’. The method will return a string output that says ‘hasta la vista’.
    - Length and weight should be instance variables.

Ans:

29. Your created class should inherit from a parent class called ‘Snake’. How do you incorporate that into your class?
Ans:

30. Which of the following Python data structures are mutable and which are immutable?

- List
- Tuple
- String
- Dictionary