N.G.M.COLLEGE (AUTONOMOUS): POLLACHI

END-OF-SEMESTER EXAMINATIONS: MAY 2024

B.Sc C.S with D.A (SF)   **MAXIMUM MARKS: 75**

SEMESTER-II   **TIME : 3 HOURS**

PART - III

23UDA204 – PROBLEM SOLVING USING PYTHON

SECTION – A   **(10 X 1 = 10 MARKS)**

ANSWER THE FOLLOWING QUESTIONS.

1. Which year was Python first released?
   A.1989   B.1991   C.1995   D.2000
2. Which of the following functions in Python is used to find the highest value in an iterable?
   A.max()   B.high()   C.peak()   D.Peak Value()
3. What is the correct way to access the last element of a list in Python?
   A.list[-1]   B.list[last]   C.list[last()]   D.list.last()
4. Numby areay can be
   A) Indexed   B)Sliced   C)Iterated   D)All of the above
5. What is the primary purpose of dictionaries in Python?
   A) To store data in key-value pairs.
   B) To perform mathematical operations.
   C) To iterate over elements in a sequence.
   D) To sort data efficiently.

ANSWER THE FOLLOWING IN ONE (OR) TWO SENTENCES

6. Explain Print( ) function.
7. Define the Lambda function
8. Define a Set.
9. Give an example for an Attribute.
10. Define Pandas.

SECTION – B   **(5 X 5 = 25 MARKS)**

ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS.

11.   a) Write a short note on the history of Python.
                            (OR)
       b) Briefly elucidate the core data types of Python
12.   a) What are the advantages of using functions in Python?
                            (OR)
       b) Briefly explain why strings in Python are considered immutable.
13.   a) Describe the functionality of the *in* and *not-in* operators when used with sets. Provide an example.
                            (OR)
       b) Give two examples of built-in functions you can use on tuples, and explain their functionalities.
14.   a) Briefly enumerate the steps involved in adding and replacing the values of Dictionaries.
                            (OR)
       b) Differentiate between passing a value and passing an object as a parameter to a method. Discuss the implications of each approach.

15.   a) Interpret the universal functions of NumPy with examples.

(OR)

       b) Explain the types of plot available in Matplot lib.

SECTION – C   **(5 X 8 = 40 MARKS)**

ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS.

16.   a) Write a python program that takes a string as input and counts the number of uppercase letters, lowercase letters, and digits in the string. Print the counts of uppercase letters, lowercase letters, and digits.   **(OR)**

       b) Explain the Decision and Loop control statement of python in detail.

17.   a) Define recursion with an example. What are the benefits and drawbacks of using recursive Functions in a loop?

(OR)

       b) Describe various string operations that can be performed in Python.

18.   a) Briefly enumerate the list comprehensions in detail. Give an example.

(OR)

       b) Explain the zip() function and provide an example of how it can be used to combine multiple lists into a list of tuples.

19.   a) Relate the need of dictionaries in Python compared to other data structures. Briefly describe the basic format of a dictionary.

(OR)

       b) Illustrate the essential aspects of object oriented programming.Describe two practical scenarios where it would be used.

20.   a) Interpret the Min() and Max() functions to final the smallest value and largest value of the data in Python.

(OR)

       b) Explain how to Index, select and operate data in pandas.

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