D5BMC2201 **Reg. No.....**

Name: .....

FIFTH SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2024

COMPUTER SCIENCE AND MATHEMATICS (DOUBLE MAIN)

GDCS5B07T: DATA ANALYTICS USING PYTHON

Time: 2 Hours **Maximum Marks: 60**

SECTION A: Answer the following questions. Each carries *two* marks.
(Ceiling 20 marks)

1. Give the syntax and use of for loop.
2. List the applications of data analytics.
3. What are packages?
4. Write a NumPy program to reverse an array.
5. Differentiate between shallow copy and a deep copy in NumPy.
6. Write a program to sort a NumPy array in ascending or descending order.
7. What is 2D plotting?
8. Differentiate between statement and expression.
9. Discuss how pandas data frame can be constructed.
10. What is series objects in pandas?
11. Define reinforcement learning.
12. What is over-fitting and under-fitting?

SECTION B: Answer the following questions. Each carries *five* marks.
(Ceiling 30 marks)

13. Discuss how user defined functions are created and invoked in Python.
14. What is the use of matplotlib? Draw a line plot using matplotlib.
15. Write a NumPy program to check whether each element of a 1-D array is also present in a second array.
16. Differentiate supervised and unsupervised programming.
17. Explain the methods used to handle missing values in a dataset using Scikit-Learn.
18. Distinguish between classification and clustering.
19. Write a program to create a Series with 10 random numbers in the range of 5 and 15.

SECTION C: Answer any *one* question. Each carries *ten* marks.

20. Explain exception handling mechanism in python with an example.
21. What is seaborn? Write a program to plot a line plot and histogram using seaborn.

(1 × 10 = 10 Marks)