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**24-CS-44**

**M.Sc. IV SEMESTER [MAIN/ATKT] EXAMINATION  
JUNE - JULY 2024**

**COMPUTER SCIENCE**

**Paper - IV**

**[Python for Data Science]**

*[Max. Marks : 75]*

*[Time : 3:00 Hrs.]*

*[Min. Marks : 26]*

**Note :** Candidate should write his/her Roll Number at the prescribed space on the question paper.  
Student should not write anything on question paper.  
Attempt five questions. Each question carries an internal choice.  
Each question carries **15 marks**.

- Q. 1 a)** What is Python ? How one can execute python program from command line ? (7 Marks)
- b)** What is tuple in Python ? Give difference between tuple and list in Python with example. (8 Marks)

**OR**

- a)** Explain different types of operators available in python. (7 Marks)
- b)** What is Array ? Explain any five built in methods that are used on array. (8 Marks)

- Q. 2 a)** What is Function ? Explain different types of functions in python with example. (8 Marks)
- b)** What is Python Package ? How to create package in Python ? (7 Marks)

**OR**

- a)** Explain different types of arguments in function with example. (8 Marks)
- b)** Write a program to calculate factorial of a number entered by user using recursion. (7 Marks)

- Q. 3 a)** What is Constructor in Python ? Explain types of constructor with example. (8 Marks)
- b)** How one can use super( ) function in method overriding ? Explain with example. (7 Marks)

**OR**

- a)** What is Inheritance ? Explain types of inheritance in Python. (7 Marks)
- b)** What is Exception Handling ? Describe how try and except used in exception handling ? (8 Marks)

**P.T.O.**

**Q. 4 a)** What is Data Science ? Explain types of data in data science. (7 Marks)

**b)** The mean number of a set of 5 numbers is 0.7. What extra number must be added to bring the mean up to 13.1 ? Also write a code to calculate mean of a set using numpy. (8 Marks)

**OR**

**a)** How one can reorientate data graphically ? (7 Marks)

**b)** Suppose we have the following data of the number of TV's sold by a consumer electronics shop over the week. (8 Marks)

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
4	5	3	4	5	5	3

Calculate the range, variance and standard deviation of the data.

**Q. 5 a)** How one can create, read and write CSV files in Python ? (7 Marks)

**b)** Write note on Numpy and Pandas. (8 Marks)

**OR**

**a)** Write a code to insert data and fetching data, into and from the SQL database using Python. (10 Marks)

**b)** Write note on MongoDB. (5 Marks)

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