Roll No. : .....

Total No. of Questions : **16**] [Total No. of Printed Pages : **3**

DCOM–321

M.Sc. (IIIrd Semester) Examination, Jan.–2023

COMPUTER SCIENCE

Paper – FS–COMP–MSC–CS–CE–303(c)

(Python)

*Time : **3** Hours*] [*Maximum Marks : **40***

The question paper contains three Sections.

Section–A **(Marks : 1 × 10 = 10)**

Note :– Answer all the *ten* questions carries **1** mark each. The answer should not exceed **50** words.

Section–B **(Marks : 3 × 5 = 15)**

Note :– Answer *five* questions by selecting at least *one* question from each Unit. Each question carries **3** marks. Answer should not exceed **200** words.

Section–C **(Marks : 5 × 3 = 15)**

Note :– Answer *three* questions by selecting *one* question from each Unit. Each question carries **5** marks. The answer should not exceed **500** words.

Section–A

1. (i) What is Jupyter Notebook ?

   (ii) Write the syntax to import a module.

   (iii) What do you mean by slicing in lists ?

   (iv) What do you understand by local functions ?

   (v) Give an example of Lambda function.

   (vi) Write the syntax to create a 2-D Numpy array.

   (vii) What is the purpose of using network package in Python ?

   (viii) What do you mean by a Dataframe ?

   (ix) Name a package in Python used for machine learning.

   (x) What will be the output of following line of code in Python :

   print (2% 3)

Section–B

Unit–I

2. Explain the concept of dictionary.
3. Write a Python program to print the sequences of first to natural numbers.
4. Explain the differences between a tuple and list using suitable example.

Unit–II

5. Explain the concept of exception handling in Python.
6. Write a program in Python for a number guessing game. Note down assumptions if you make any.
7. Write a function in Python to find out if some given year is leap year or not.

Unit–III

8. Write a program in Python to read a data file and show first 3 rows of the dataframe and check how many non-null values are present.
9. Explain how to draw the scatterplot of some data in Python ?
10. Explain the usage of matplotlib package with suitable example.

Section–C

Unit–I

11. Explain the concept of implicit and explicit typecasting using suitable examples.

12. Explain how to create a module and how to import a module in your program in different ways.

Unit–II

13. Describe how to perform arithmetic operations with Numpy arrays. Explain with suitable examples.

14. Write a program to copy a file from directory to another. Explain the functions used in the program.

Unit–III

15. Explain the usage of scipy package in Python with examples.

16. Write short notes on the following :

    (i) Reading data from CSV file.

    (ii) Real-life applications of Python.