**POORNIMA UNIVERSITY, JAIPUR**

**END SEMESTER EXAMINATION, APRIL 2023**

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|  | **3BT6103** | Roll No. | Total Printed Pages: 2 |
| **3BT6103** |  |
| B. Tech. III Year VI Semester (Main/Back) End Semester Examination, April 2023  **(DS)** | |
| **BDS06103 / BDS06104 : Python for Data Science** | | | |

# Time: **3** Hours. Total Marks: **60**

Min. Passing Marks: **21**

*Attempt* ***five*** *questions selecting one question from each Unit. There is internal choice from Unit I to Unit V. Marks of each question or its parts are indicated against each question / parts. Draw neat sketches wherever necessary to illustrate the answer. Assume missing data suitably (if any) and clearly indicate the same in the answer.*

Use of following supporting material is permitted during examination for this subject.

# **1.--------------------------Nil--------------------** **2.------------------Nil-----------------------**

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|  |  | **UNIT-I (CO1)** | **Marks** |
| **Q.1** | **(a)** | What is the role of python in data science? How python is different from C. | **(6)** |
|  |  |  |  |
|  | **(b)** | Write a Python function to plot a histogram of a list of numbers using Matplotlib. | **(6)** |
|  |  |  |  |
|  |  | **OR** |  |
|  |  |  |  |
| **Q.2** | **(a)** | Explain any three functions from Scikit learn. | **(3)** |
|  |  |  |  |
|  | **(b)** | Summarize the characteristics of NumPy, Pandas, Scikit-Learn and matplotlib libraries along with their usage in brief. | **(9)** |
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|  |  | **UNIT-II (CO2)** |  |
|  |  |  |  |
| **Q.3** |  | Explain following data structures of python with suitable example.  1. String 2. List 3. Tuple 4. Dictionary | **(12)** |
|  |  |  |  |
|  |  | **OR** |  |
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| **Q.4** | **(a)** | Write a python program to calculate sum of cubes of numbers of list. | **(6)** |
|  |  |  |  |
|  | **(b)** | Write a python program to print following patterns.  a. 1 b. 1  12 21  123 321  1234 4321  12345 54321 | **(6)** |
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|  |  | **UNIT-III (CO3)** |  |
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| **Q.5** | **(a)** | Explain different ways of Sampling data | **(5)** |
|  |  |  |  |
|  | **(b)** | What is Structured Flat-File Form, and how to access data from that in python? | **(7)** |
|  |  | **OR** |  |
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| **Q.6** | **(a)** | Explain with example how to parse XML and HTML | **(6)** |
|  |  |  |  |
|  | **(b)** | Write a python code for accessing Data from NoSQL databases. | **(6)** |
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|  |  | **UNIT-IV (CO4)** |  |
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| **Q.7** | **(a)** | Write a python code that demonstrate hashing trick | **(5)** |
|  |  |  |  |
|  | **(b)** | Define Skewness and Kurtosis, write python code to calculate skewness and kurtosis of any feature of IRIS data set. | **(7)** |
|  |  |  |  |
|  |  | **OR** |  |
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| **Q.8** | **(a)** | Explain Cross-validating, Grid-searching, Multilabel prediction, Ensemble machine-learning methods | **(6)** |
|  |  |  |  |
|  | **(b)** | Write a python code for demonstrate multiprocessing. | **(6)** |
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|  |  | **UNIT V (CO5)** |  |
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| **Q.9** | **(a)** | What do you mean by Exploratory Data Analysis (EDA)? How t-test is useful for EDA? | **(5)** |
|  |  |  |  |
|  | **(b)** | List different way for defining descriptive statistics for Numeric Data. Explain them in brief. | **(7)** |
|  |  |  |  |
|  |  | **OR** |  |
|  |  |  |  |
| **Q.10** | **(a)** | Explain Z-score standardization. | **(6)** |
|  |  |  |  |
|  | **(b)** | Write a code to draw pie chart using python’s library. | **(6)** |