

Seat No./Enrollment No.: _____

GUJARAT TECHNOLOGICAL UNIVERSITY
BACHELOR OF ENGINEERING – SEMESTER 4 – EXAMINATION – SUMMER 2026

Subject Code: 3144601 **Date: 25/05/2026**

Subject Name: Python for Data Science

Time: 10:30 AM TO 01:00 PM **Total Marks: 70**

Instructions:

- 1. Attempt all questions.**
- 2. Make suitable assumptions wherever necessary.**
- 3. Figures to the right indicate full marks.**
- 4. Simple and non-programmable scientific calculators are allowed.**

- Q.1**
- (a) Explain the concept of list comprehension with an example. **03**
- (b) Give the output of following Python code. **04**
- ```
A = [108,'abc']
B = (108,'abc')
C = 108
D = B[0]
print(A is B)
print(C is D)
print(A == B)
print(C == D)
```
- (c) How *dictionary* can be declared in Python? Demonstrate different operation which can be performed on *dictionary* with proper example. **07**
- Q.2**
- (a) Demonstrate the use of *for* loop in Python. **03**
- (b) Give the output of following Python code. **04**
- ```
A = [1,'a', 0.2, 'xyz', 1, 'a']  
B = {1,'a', 0.2, 'xyz', 1, 'a'}  
print(len(A))  
print(len(B))
```
- (c) Demonstrate the concept of default argument in Python with proper example. **07**
- OR
- Q.2**
- (c) Demonstrate the concept of keyword argument in Python with proper example. **07**
- Q.3**
- (a) What is the significance of *global* keyword in Python? **03**
- (b) How we can handle issue of missing data in dataset? **04**
- (c) Write a Python program using the concept of user defined exception to print an exception message “Invalid Age” if user enters value of age less than 18. **07**
- OR
- Q.3**
- (a) What is the significance of lambda function? **03**
- (b) How we can combine datasets? **04**
- (c) Why exception needs to be handled? How we can handle exception in Python? **07**
- Q.4**
- (a) Explain: Data wrangling **03**
- (b) Demonstrate the concept of fancy indexing in NumPy. **04**

(c) List all the plots supported by Seaborn library and explain any two plots in detail. **07**

OR

Q.4 (a) Explain: Slicing and Dicing with respect to Data wrangling. **03**

(b) Demonstrate NumPy array slicing with an example. **04**

(c) Explain any four NumPy aggregation functions. **07**

Q.5 (a) What is Prediction in Data Science? Explain with suitable examples. **03**

(b) What approaches can be used to handle outliers in dataset? **04**

(c) Give two use cases where linear regression is useful with proper justification. **07**

OR

Q.5 (a) What is Classification in Data Science? Explain with suitable examples. **03**

(b) What are the common techniques used for dimensionality reduction in datasets? **04**

(c) Give two use cases where logistic regression is useful with proper justification. **07**
