GL BAJAJ
Institute of Management & Research. PGDM Institute
FIND YOUR SPARK
GREATER NOIDA (Approved by A.I.C.T.E., Ministry of HRD, Govt. of India)

Roll No.: …..……

Plot No. 2, Knowledge Park-III, Greater Noida (U.P.) –201306

POST GRADUATE DIPLOMA IN MANAGEMENT (2023-25)
MID TERM Examination
TERM-IV (Sep'24)

Subject Name: **Python for Business Analytics** Time: **01:00 Hrs.**
Sub. Code: **PGIT31** Max Marks: **20**

Note:

1. **All questions are compulsory. Options, where applicable, are part of the respective questions.**
2. **Section A is worth 10 marks, and Section B is worth 10 marks.**
3. **Avoid overwriting code. If you need to make corrections, strike through the original with a single line and rewrite the correct version, leaving a few lines of space between them.**

SECTION – A

Attempt all questions. **10 Marks**

Q1. A) Based on the given dataset answer the following questions (any 6 parts: 1 mark each):

Dataset:

```
List_arr = [10, 20, 30, 40, 50]
```

Write Python code to:

1) Get the first 3 elements of the list.
2) Get the last 2 elements of a list.
3) Reverse a list using slicing.
4) Get all elements of the list except the first one.
5) Get all elements except the last two.
6) Return all elements except the first and last.
7) Replace the middle 2 elements with 100 and 200.

B) Answer all, each question marks are given along with it.

1) Write a function "add_elements" to add two numbers. [1]
2) Put the above function in a module "myModule". [3]
   Write all the steps to create the module.
   Write code to call the function "add_elements" from the module "myModule".

SECTION – B

Attempt all questions. **10 Marks**

Q2. Based on the given dataset answer the following questions (all parts: 2 mark each):

Dataset:

```
import numpy as np

sales_data = np.array([
   [200, 210, 190, 205, 198],  # Store 1
   [150, 160, 155, 165, 158],  # Store 2
   [300, 320, 315, 330, 310]   # Store 3
])
print(sales_data)
```

```
[[200 210 190 205 198]
 [150 160 155 165 158]
 [300 320 315 330 310]]
```

```
# Hint: for row and column reference use axis option
```

a) Write Python code to add a new store's sales data [250, 260, 255, 270, 265] to the dataset.
b) Write Python code to Calculate the average sales across all stores and all days.

Q3. Based on the given dataset answer the following questions (any 3 parts: 2 mark each):

Dataset:

```
import pandas as pd
import numpy as np

# DataFrame with sales data
data = {
   'Store': ['Store A', 'Store B', 'Store C', 'Store A', 'Store B',
         'Store C', 'Store A', 'Store B', 'Store C', 'Store A'],
   'Day': ['Day 1', 'Day 1', 'Day 1', 'Day 2', 'Day 2',
        'Day 2', 'Day 3', 'Day 3', 'Day 3', 'Day 4'],
   'Sales': [200, 220, np.nan, 210, 180,
         np.nan, 250, 270, 260, np.nan]
}

sales_data = pd.DataFrame(data)
print(sales_data)
```

```
     Store    Day  Sales
0  Store A  Day 1  200.0
1  Store B  Day 1  220.0
2  Store C  Day 1    NaN
3  Store A  Day 2  210.0
4  Store B  Day 2  180.0
5  Store C  Day 2    NaN
6  Store A  Day 3  250.0
7  Store B  Day 3  270.0
8  Store C  Day 3  260.0
9  Store A  Day 4    NaN
```

a) Write Python code to select all entries where the sales are greater than 200.
b) Write Python code to get summary statistics (count, mean, std, min, 25%, 50%, 75%, max) for the Sales column.
c) Write Python code to display only the sales data for Day 4?
d) Write Python code to select all rows where the sales are below the average sales across the dataset?
e) Write Python code to Display rows with missing values in the Sales column
f) Write Python code to drop all rows with NaN values from the dataset.

-- Best Wishes --