



Registration Number:

Date & session:

**ST JOSEPH'S UNIVERSITY, BENGALURU -27**  
**M.Sc. (BIG DATA ANALYTICS) – I SEMESTER**  
**SEMESTER EXAMINATION: OCTOBER 2023**  
**(Examination conducted in November /December 2023)**  
**BDA1621 – PYTHON PROGRAMMING**  
**(For current batch students only)**

**Time: 2 Hours**

**Max Marks: 50**

**This paper contains TWO printed pages and THREE parts**

**PART A**

**ANSWER ALL THE QUESTIONS**

**5 X 2 = 10**

1. Write Pythonic code to check whether the given number is Armstrong number.
2. Explain Type conversion in Python with an example.
3. Discuss Assertion with an example.
4. Explain polymorphism and its types.
5. Consider the following Series object, s  
IP 95  
Physics 89  
Chemistry 92  
Math 95
  - i. Write the Python syntax which will display only IP.
  - ii. Write the Python syntax to increase marks of all subjects by 10.

**PART B**

**ANSWER ANY FIVE QUESTIONS**

**5 X 4 = 20**

6. What is an arithmetic expression? . What is the output of this statement? **'hello world' + 100 + 'how are you'** explain the reason if the statement produces an error.
7. Using string slicing operation write python program to reverse each word in a given string (eg: input: "hello how are you", output: "olleh woh era uoy")
8. Make a list of the first eight letters of the alphabet, then using the slice operation do the following operations:
  - i. Print the first three letters of the alphabet. 1
  - ii. Print any three letters from the middle. 1
  - iii. Print the letters from any particular index to the end of the list. 2
9. Write a Python program that accepts a sentence and calculates the number of words, digits, uppercase letters, and lowercase letters.

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10. Write a Python program to create a folder PYTHON and under the hierarchy 3 files file1, file2 and file3. write the content in file1 as "St. Josephs" and in file2 as "UNIVERSITY" and file3 content should be "St. Joseph's UNIVERSITY" by opening and merging file1 and file2. Check out the necessary conditions before writing file3.
11. Discuss the different types of inheritance supported by Python? Explain with an example.
12. Which property of Series help to check whether a Series is empty or not? Explain with an example.

### PART C

**ANSWER ANY TWO QUESTIONS**

**2 X 10 = 20**

13.
  - i. Explain the different ways how run-time errors can be handled in Python. Give example. 4
  - ii. What is operator overloading? Write a pythonic code to overload "+", "-" and "\*" operators by providing the methods `__add__`, `__sub__` and `__mul__`. 6
14. Write a python application to demonstrate difference between instance method, class method and static method.
15.
  - i. What is DataFrame? Write the features of DataFrame. Explain how to create a DataFrame from an Excel Spreadsheet.
  - ii. What is numpy module? Explain indexing and slicing operations on numpy array.