



Reg. No. :

Name :

IV Semester B.Sc. Degree (C.B.C.S.S. – O.B.E. – Supplementary/
Improvement) Examination, April 2026
(2023 Admission)

CORE COURSE IN ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING
4B06 AIML : Python for Machine Learning

Time : 3 Hours

Max. Marks : 40

PART – A
(Short Answer)

Answer **all** questions. **Each** question carries **1** mark.

(6×1=6)

1. What are the different ways to run a Python program ?
2. What is the difference between `is` and `==` operators in Python ?
3. What is the purpose of the `sys` module in Python ?
4. How do you check the type of a variable in Python ?
5. What does the `zip ()` function do in Python ?
6. What are the different ways to create a dictionary in Python ?

PART – B
(Short Essay)

Answer **any six** questions. **Each** question carries **2** marks.

(6×2=12)

7. Explain the concept of dynamic typing in Python.
8. What is the difference between `deepcopy ()` and `copy ()` functions in Python ?
9. How does the `pass` statement work in Python ?
10. What do you mean by default argument in python ? Provide an example.
11. How do you raise and handle a custom exception in Python ?

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12. Explain the concept of shape manipulation in NumPy.
13. What are the key differences between Pandas Series and DataFrames ?
14. How do you filter rows in a Pandas DataFrame based on a condition ?

PART – C
(Essay)

Answer **any four** questions. **Each** question carries **3** marks. (4×3=12)

15. Discuss the various types of string manipulation methods in Python.
16. How does slicing work in Python lists and tuples ? Provide examples.
17. Explain the concept of functions in python.
18. What are the different ways to handle missing values in a Pandas DataFrame ?
19. How does NumPy handle element-wise arithmetic operations on arrays ? Provide an example.
20. Explain the different ways of joining and merging DataFrames in Pandas.

PART – D
(Long Essay)

Answer **any two** questions. **Each** question carries **5** marks. (2×5=10)

21. Explain the different types of data structures available in Python with examples.
 22. Discuss different file-handling modes in Python and provide examples for each.
 23. How do you visualize data using Pandas and Matplotlib ? Provide examples.
 24. Compare and contrast NumPy and Pandas in terms of functionality and performance.
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