

Roll No.

(05/25)

14351

B.C.A. EXAMINATION

(For Batch 2021 & Onwards)

(Sixth Semester)

PYTHON PROGRAMMING

BCA-61

Time : Three Hours

Maximum Marks : 80

Note : Q. No. 1 is compulsory. Attempt other *four* questions by selecting *one* question from each Unit. All questions carry equal marks.

1. (i) Define the term "token" in Python with an example.
- (ii) What is the difference between a list and a tuple ?
- (iii) Explain the use of break and continue statements in Python.

- (iv) What are modules in Python ? Give an example.
- (v) Write a Python code to calculate the factorial of a number.
- (vi) What is the purpose of exception handling in Python ?
- (vii) Define polymorphism in the context of object-oriented programming.
- (viii) Mention any *two* common database operations using Python.

Unit I

- 2. (a) Explain the different data types in Python with suitable examples.
- (b) Write a Python program to check whether a given string is a palindrome or not.
- 3. (a) What are control structures in Python ? Explain conditional branching with suitable examples.
- (b) Discuss the difference between mutable and immutable data types in Python. Provide examples.

Unit II

- 4. (a) Explain the concept of recursion with an example program to calculate the Fibonacci series.
- (b) What are the Python standard libraries ? Name and describe any *two*.
- 5. (a) Discuss the importance of modules in Python. Write a program to demonstrate the use of math and random modules.
- (b) Explain iteration in Python with an example of a 'for' loop.

Unit III

- 6. (a) What is the role of a constructor in Python ? Write a program to demonstrate its use.
- (b) Explain the concept of inheritance in Python with suitable code.
- 7. (a) Discuss exception handling in Python. Write a program that handles division by zero using try-except.
- (b) Explain the concept of method overriding in Python with an example.

Unit IV

8. (a) What is NumPy ? Write a Python program to create a NumPy array and perform slicing operations.
- (b) Discuss the basic database operations in Python using SQL.
9. (a) Explain the difference between join and merge in database programming. Write a Python example using join.
- (b) Describe the steps to connect a Python program to a MySQL database.