

Term End Examination January – 2026

Course	: MCA	Date	: 22/02/2026
Subject Code	: MCA-302	Time	: 03:00pm to 05:15pm
Subject Name	: Problem Solving using Python	Duration	: 02.15 Hours
		Max. Marks	: 70

Section A

Answer the following (Attempt any three)

(30)

1. Describe different built-in data types supported by Python with suitable examples.
2. Explain loop control structures in Python.
3. Explain Python modules. Discuss the need for modules, types of modules, and the use of import statement with examples.
4. Explain lists and tuples in Python. Compare lists and tuples and explain common operations performed on them with examples.
5. Explain inheritance and polymorphism in Python.

Section B

Answer the following (Attempt any four)

(20)

1. Define variables in Python and explain the rules for naming identifiers.
2. What is type casting? Explain implicit and explicit type conversion in Python.
3. Differentiate between set and list in Python.
4. Explain string data type in Python.
5. Explain exception handling in Python.
6. What is method overriding? Explain with an example.

Section C

Part – A (Multiple Choice Questions)

(10)

- 1 Which function is used to identify the data type of a variable in Python?
A `datatype()` B `id()`
C `value()` D `type()`
- 2 Which operator is used for floor division in Python?
A `/` B `%`
C `//` D `**`
- 3 Which keyword is used to test multiple conditions sequentially?
A `else` B `If`
C `switch` D `elif`
- 4 Which type of function does not return any value explicitly?
A Recursive B Void
C Lambda D User-defined
- 5 Which file extension is used for Python modules?
A `.py` B `.mod`
C `.pt` D `.exe`
- 6 Which method is used to add an element at the end of a list?
A `add()` B `insert()`
C `append()` D `extend()`

- 7 Which method removes a key from a dictionary?
A delete() B pop()
C remove() D discard()
- 8 Which operation finds common elements between two sets?
A Intersection B Union
C Difference D Complement
- 9 Which function returns the length of a string?
A size() B count()
C len() D index()
- 10 Polymorphism allows:
A Multiple classes B Multiple methods with same name
C Multiple files D Multiple variables

Part – B (Do as Directed)

(10)

State whether the following statements are true or false

- 1 Python automatically assigns a data type to a variable at runtime.
2 Explicit type casting is performed automatically by the Python interpreter.
3 The elif keyword can be used multiple times in a conditional structure.
4 A function in Python can return more than one value.
5 Tuples consume more memory than lists.
6 A dictionary can store duplicate keys.
7 Sets maintain the order of insertion of elements.
8 Python supports multiple inheritance.
9 Exception handling improves the reliability of a program.
10 GUI applications can only be developed using external libraries.
