

**PRACTICE SET**  
**End Semester Examination, Dec -2025**

**Program: MCA**  
**Semester: Third**  
**Course: Python Programming**  
**Course Code: 3CIT203**

<b>Course Outcomes</b>	<b>Description</b>
CO1	Define and demonstrate the use of built-in data structures “lists” and “dictionary”.
CO2	Design and implement a program to solve a real world problem.
CO3	Design and implement GUI application and how to handle exceptions and files.
CO4	Make database connectivity in python programming language.

**SECTION A**

**(EACH QUESTION CARRIES 5 MARKS)**

1. Explain the role of indentation in Python and explain why it is important.  
[CO1] [Unit 1] [Remember, LOT]
2. Discuss the importance of data types in Python variables and provide examples of at least three different data types.  
[CO1] [ Unit 1] [Understand, LOT]
3. Why Python is called Dynamically Typed? [CO1] [ Unit 1] [Analyze, HOT]
4. Is Python - Interpreted and (Byte) Compiled language? Explain.  
[CO2] [ Unit 1] [Understand, LOT]

5. What are keywords and also write the name of all the keywords of Python.  
[CO1] [ Unit 1] [Remember, LOT]
6. Define single-line comment & multi-line comment along with an example.  
[CO1] [ Unit 1] [Remember, LOT]
7. Write a Python program that takes two numbers as input from the user and prints their sum, difference, product, and quotient. [CO2] [ Unit 2] [Apply, LOT]
8. Give the output of the following :- [CO2] [ Unit 2] [Evaluate, HOT]  
print ("Hello")  
print (156 % 7)  
print (34 < 20) and ( 2 == 4))  
print ( -2 \* 4 + 3 \* \* 2)  
print ( -2 \* 3 + 3 % 2)
9. Justify how Lists, Set, Dictionary are mutable in nature with an example.  
[CO2] [ Unit 2] [Analyze, HOT]
10. Justify how Tuples, String and Integer are immutable in nature with an example.  
[CO2] [ Unit 2] [Analyze, HOT]
11. Differentiate between JAVA and PYTHON. [CO1] [ Unit 3] [Understand, LOT]
12. Describe the types of prompts exist in the Python language with an example of each.  
[CO1] [ Unit 3] [Apply, LOT]
13. What is string? What are the different ways of representation of a String with an example of each? [CO1] [ Unit 3] [Understand, LOT]
14. Explain different Files built-in Methods in Python. [CO3] [ Unit 4] [Understand, LOT]

## SECTION B

(EACH QUESTION CARRIES 10 MARKS )

15. Discuss the usage of basic operators in Python with examples. [CO1] [ Unit 1] [Understand, LOT]
16. Discuss the mutability and immutability of Python data types. Give examples of each and explain.  
[CO1] [ Unit 1] [Understand, LOT]

17. Write a Python program to count the number of vowels in a given string.  
[CO2] [ Unit 1] [Apply, LOT]
18. Differentiate between the `==` operator and the `is` operator in Python with suitable examples.  
[CO3] [ Unit 1] [Analyze, HOT]
19. What is an operator and what are the different arithmetic operators in python along with an example of each.  
[CO3] [ Unit 1] [Apply, LOT]
20. Describe logical operators & its types in python along with an example of each.  
[CO2] [ Unit 1] [Understand, LOT]
21. What is set? What are the different ways of representation of a set with an example of each?  
[CO1] [ Unit 1] [Remember, LOT]
22. Write a python program showing that Set and Dictionary data types do not allow duplicate elements But List and tuple data types allow duplicate elements.  
[CO2] [ Unit 1] [Apply, LOT]
23. Create a Python program that defines a list of numbers. Write a function find max that takes the list as input and returns the largest number in the list. [CO2] [ Unit 2] [Create, HOT]
24. Write a short note on Conditional statements in Python along with suitable examples.  
[CO1] [ Unit 2] [Remember, LOT]
25. Describe Nested if statement & Switch statement in python along with an example of each.  
[CO2] [ Unit 2] [Apply, LOT]
26. Describe if-elif-else ladder statement & Switch statement in python along with an example of each.  
[CO2] [ Unit 2] [Apply, LOT]
27. Describe looping statements in python along with an example of each.  
[CO2] [ Unit 2] [Understand, LOT]
28. Explain the difference between local and global variables in Python with examples.  
[CO1] [ Unit 2] [Analyze, HOT]

29. What is tuple? What are the different ways of representation of tuple with an example of each? [CO3] [ Unit 2] [Apply, LOT]
30. What is List? What are the different ways of representation of List with an example of each? [CO3] [ Unit 2] [Apply, LOT]
31. Describe Dictionary data type along with an example. [CO3] [ Unit 3] [Understand, LOT]
32. Difference between Positive indexing & Negative indexing along with an example of each. [CO3] [ Unit 3] [Analyse, HOT]
33. Describe Python built-in functions along with an example of each. [CO3] [ Unit 3] [Understand, LOT]
34. Explain RETURN statement & PASS statement in Python along with an example of each. [CO2] [ Unit 3] [Understand, LOT]
35. Explain break statement, continue statement in Python along with an example of each. [CO2] [ Unit 3] [Understand, LOT]
36. Write a Python program that prints the first 10 numbers of the Fibonacci sequence. Use a “for” loop to generate the sequence. [CO3] [ Unit 3] [Create, HOT]
37. Describe the file’s built-in method (i.e open () & close () ) and also different types of access mode using an example. [CO4] [ Unit 4] [Analyse, HOT]
38. Write a Python program that reads the contents of a file named example.txt and prints each line to the console. Ensure your program handles the case where the file does not exist by printing an appropriate error message. [CO4] [ Unit 4] [Create, HOT]
39. Write a python program to convert temperature to and from Celsius to Fahrenheit using function. [CO4] [ Unit 4] [Create, HOT]

## SECTION C

(EACH QUESTION CARRIES 20 MARKS )

- 40.** Compare and contrast dictionaries and sets in Python. Provide examples to illustrate:  
[CO2] [ Unit 1 ] [Analyze, HOT]
- How to create and manipulate a dictionary, including adding, removing, and updating key-value pairs.
  - How to create and manipulate a set, including adding, removing elements, and performing set operations like union, intersection, and difference.
- 41.** [CO3] [ Unit 1 ] [Analyze, HOT]
- Describe the concept of recursion and provide an example of a recursive function in Python.
  - Write a recursive function to calculate the factorial of a number. Explain the base case and the recursive case in your function.
- 42.** [CO3] [ Unit 2 ] [Create, HOT]
- Write a python program to print prime numbers less than 20.
  - Write a python program to create, append and remove lists in python.
- 43.** Discuss the differences between the 'r', 'r+', 'w', 'w+', 'a', and 'a+' modes in Python file handling. Explain how these modes affect the behavior of reading from and writing to files. Illustrate with examples.  
[CO3] [ Unit 3 ] [Analyze, HOT]
- Write a Python function to implement pow (x, n). [CO3] [ Unit 3 ] [Create, HOT]
- 44.**
- Describe list slicing technique of python along with an example .  
[CO3] [ Unit 3 ] [Analyze, HOT]
  - Find the output of the following python program:-  
[CO3] [ Unit 3 ] [Evaluate, HOT]

```
List1=[52,1,3,40,5,6,7,8,11]
```

```
print("\nOriginal List:\n")  
print(List1)
```

```
print(List1[4:9:5])
```

```
print(List1[-5::1])
print(List1[:2])

List2=List1[:3] + List1[1::2]
print(List2)
```

45.

a. Illustrate **File Handling in Python** along with its types and example.

[CO3] [ Unit 4] [Analyse, HOT]

b. Write a python program to run a SQL Query by connecting Python with mySql database?

[CO3] [ Unit 4] [Create, HOT]

46.

[CO4] [ Unit 4] [Create, HOT]

- a. Write a Python script to connect to a MySQL database and create a table named students with the following columns: id (INT, Primary Key, Auto Increment), name (VARCHAR(100)), and age (INT). Ensure the script handles any potential exceptions that may occur during the process.
- b. Given the following data, write a Python script to insert these records into the students table and then retrieve and print all records from the table:

```
Record 1: Name = "Alice", Age = 23
Record 2: Name = "Bob", Age = 25
Record 3: Name = "Charlie", Age = 22
```

## Summary Sheet:

### CO Wise

<b>CO</b>	<b>Q. No</b>	<b>Marks</b>
CO1	1,2,3,5,6,11,13,15,16,21,24,28	90
CO2	4,7,8,9,10,17,20,22, 23,25,26,27,34,35,40	135
CO3	14,18,19,29,30,32, 33,35,36,41,43,44	145
CO4	37,38,39,46	50
<b>Total</b>		<b>420</b>

### Unit Wise

<b>Unit</b>	<b>Q. No</b>	<b>Marks</b>
Unit 1	1,2,3,4,5,6,15, 16,17,18,19,20,21,22,40	130
Unit 2	7,8,9,10,23,24, 25,26,27,28,29,41	110
Unit 3	11,13,31,32, 33,34,35,36,43,44	110
Unit 4	14,37,38,39,45,46	70
<b>Total</b>		<b>420</b>

### Blooms Taxonomy Level (BTL) Wise

<b>BTL</b>	<b>Q. No</b>	<b>Marks</b>
LOT	1,2,4,5,6,7,11,12,13,14, 15,16,17,19,20,21,22,24,25, 26,27,29,30,31,33,34,35,36,37	200
HOT	3,8,9,10,18,23,28,32, 36,37,38,39,40,41,42,43,44,45,46	220
<b>Total</b>		<b>420</b>

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**Reviewed By:**

**Disclaimer:** - This is a Practice Set. The Question in End term examination will differ from the Practice set. This Practice set is meant for practice only.

