PARUL UNIVERSITY
FACULTY OF ENGINEERING & TECHNOLOGY
B.Tech Mid Semester Exam

Semester: 4
Date: (31/01/2024)
Subject Code: 303105257
Time: (1hr: 30min)
Subject Name: Programming In Python With Full Stack Development
Total Marks: 40

Sr. No.		Marks

Q.1 **(A) Five One line Questions** 05
1) What is the purpose of the **format()** function in Python?
2) What does the __init__ method do in a Python class?
3) Explain the difference between a list and a tuple in Python.
4) How can you open and read a text file in Python in a single line?
5) How can you reverse a list in Python using a single line of code?

(B) Five Fill in the blanks 05
1) The _____ statement is used for conditional execution in Python.
2) To remove the last element from a list in Python, you can use the _____ method.
3) The _____ statement is used for conditional execution in Python.
4) To concatenate two lists in Python, you can use the + operator or the _____ method.
5) To comment out a single line in Python, use the _____ character.

Q.2 **Attempt any four (Short Questions)** 12
(1) Explain the difference between the **append()** and **extend()** methods for lists in Python.
(2) Explain the difference between a function definition and a function call in Python.

(3) Briefly explain the concept of encapsulation in the context of Python classes.

(4) What is method overloading in Python classes, and how is it different from method overriding?

(5) How can you achieve inheritance in Python classes? Provide a brief example.

Q.3 **Attempt any two questions** 08
(1) Define and explain the term "polymorphism" in the context of Python. Provide examples of both method overloading and method overriding to demonstrate polymorphic behavior
(2) Describe the concept of inheritance in Python and explain how it is implemented in classes. Provide an example to illustrate your explanation.

(3) How does the Python **range()** function work, and provide an example of its usage in a **for** loop.

Q.4   (A) write a program that reads a text file and counts the number of words in it.   05

(B) Describe the purpose of the Python **try, except,** and **finally** blocks in exception   05
handling. Provide a simple example.

OR

(B) write a program that simulates a school management system, with classes for the   05
students, the teachers, and the courses.