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| **SESSION** | **APRIL 2025** |
| **PROGRAM** | **MASTER of CoMPUTER APPLICATIONS (MCA)** |
| **SEMESTER** | **1** |
| **course CODE & NAME** | **DCA6109 PYTHON PROGRAMMING** |
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**SET-I**

**1.a) Discuss differences between implicit and explicit type conversion with example.**

**b) What are the potential risks of not properly closing a file after operations are completed?**

**Ans 1.**

**Differences Between Implicit and Explicit Type Conversion and Risks of Not Closing Files Properly**

**Implicit vs. Explicit Type Conversion in Python**

In Python programming, type conversion refers to the process of converting one data type into another. This conversion can be done either implicitly or explicitly. Implicit type conversion, also known as type coercion, is automatically performed by the Python interpreter. It occurs when the interpreter promotes one data type to another to avoid data loss. For example, if you add an integer and a float, Python automatically converts the integer to a float before performing the operation. Consider the expression a = 5 + 3.2. Here, the integer 5 is implicitly converted to float, and the

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**2.a) What is list? Explain insert(), append() and extend() methods with example.**

**b) Explain the use of following string functions: - upper(), lower(), isdigit(), isalpha(), split(), join() with example.**

**Ans 2.**

**List and Its Methods: insert(), append(), and extend()**

In Python, a *list* is a built-in data type used to store a collection of items in a single variable. Lists are mutable, meaning their contents can be changed after creation. Lists are ordered, allowing access through indexing, and can contain elements of any data type—integers, strings, floats, or even other lists. Lists are written using square brackets. For example, my\_list = [10, 20, 30, "Python"] is a valid list containing both integers and a string.

Python provides several methods to manipulate the contents of a list. The append() method is used

**3.a) Why is exception handling important? How do you handle multiple exceptions in python? Explain with example.**

**b) Discuss different types of methods used for reading data from file.**

**Ans 3.**

**Importance of Exception Handling and Handling Multiple Exceptions in Python**

Exception handling is a critical feature in Python that ensures programs can manage errors gracefully without crashing unexpectedly. Errors during program execution, such as dividing by zero, accessing an invalid index, or opening a non-existent file, can disrupt the normal flow of a program. Instead of allowing the program to terminate abruptly, exception handling allows the

**SET-II**

**4.a) What are view functions in flask? Explain static and dynamic routes in detail.**

**b) Write a regular expression for validating Indian mobile numbers entered by users. (+91 XXXXXXXXXX)**

**Ans 4.**

**View Functions in Flask and Routing Mechanisms**

In Flask, a *view function* is a Python function associated with a specific URL route. When a user visits a particular URL in a web browser, Flask calls the corresponding view function to generate the response. View functions are defined using the @app.route() decorator, which maps the URL to the function. The purpose of a view function is to handle HTTP requests and return responses,

**5.a) Explain role of game loops and event handling in game development.**

**b) What are transactions? Explain importance of SAVEPOINT in transaction failure.**

**Ans 5.**

**a) Role of Game Loops and Event Handling in Game Development**

In game development, the *game loop* is the central component that keeps the game running smoothly. It is responsible for continuously updating the game’s state and rendering it to the screen. The loop executes many times per second (commonly 30 to 60 frames per second) and ensures that gameplay, animations, and interactions occur in real-time. The basic structure of a game loop involves checking for user input (event handling), updating game objects (like

**6. a) Explain the significance of PEP8 guidelines in Python development.**

**b) What do you understand by Continuous Integration and Continuous Deployment (CI/CD) in the context of Python applications?**

**Ans 6.**

**a) Significance of PEP8 Guidelines in Python Development**

PEP8 is the official *Python Enhancement Proposal* that provides style guidelines for writing clean, readable, and maintainable Python code. It plays a crucial role in ensuring uniformity in Python development across projects and teams. Following PEP8 helps avoid confusion, reduce bugs, and improve collaboration, especially in larger teams or open-source projects.

Key PEP8 conventions include using 4 spaces for indentation, limiting lines to 79 characters,