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| **SESSION** | **NOVEMBER 2024** |
| **PROGRAM** | **MASTER OF COMPUTER APPLICATIONS (MCA)** |
| **SEMESTER** | **1** |
| **COURSE CODE & NAME** | **DCA6109 PYTHON PROGRAMMING** |
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**Set-I**

**1.a) Explain naming rules for python identifiers in detail.**

**b) What is lambda function? Why is it used? 5+5**

**Ans 1.**

**a) Naming Rules for Python Identifiers**

Identifiers in Python are the names used to identify variables, functions, classes, or other objects. These names must adhere to certain rules to ensure they are valid and interpretable by the Python interpreter.

First and foremost, an identifier must begin with either a letter (A-Z or a-z) or an underscore (\_). For instance, names like variable1 or \_hidden\_variable are valid, but 1variable or -name are not. After the initial character, the identifier can include letters, digits (0-9), or underscores but cannot have special characters such as @, #, $, or spaces. Python identifiers are also case-sensitive, meaning Variable and variable are considered two different names.

Reserved words or keywords in Python, such as if, else, while, and for, cannot be used as

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**2. a) Discuss the use of else statement with for and while loop. Explain with an example.**

**b) Explain the use of following string functions: - upper(), lower(), isdigit(), isalpha(), split(), join() with example. 5+5**

**Ans 2.**

**a) Else Statement with Loops**

In Python, the else statement can be used in conjunction with for and while loops. This feature is unique and not found in many other programming languages. The else block is executed after the loop has completed all its iterations, provided that no break statement was encountered during the loop execution.

For example, in a for loop iterating over a range of numbers, the else block can execute a message indicating the loop completed successfully. Similarly, in a while loop, the else block runs when the loop condition becomes false naturally, rather than being prematurely terminated.

**3.a) What are the different modes for reading and writing data into a file?**

**b) Explain differences between list, tuple, set and dictionary. 5+5**

**Ans 3.**

**a) Different Modes for Reading and Writing Data into a File**

Python provides several modes for working with files, allowing developers to read, write, or append data based on their specific requirements. These modes define how the file will be opened and how operations will be performed on it.

1. **Read Mode (r)**: This mode is used to open a file for reading only. The file pointer is placed at the beginning of the file, and attempting to write to the file in this mode will raise an error. If the file does not exist, Python will throw a FileNotFoundError.
2. **Write Mode (w)**: The write mode is used to open a file for writing. If the file already exists, it will be overwritten. If the file does not exist, it will be created. Data written to

**Set-II**

**4. a) How to create user defined exceptions in python? Explain with example.**

**b) Write a regular expression for validating Indian mobile numbers entered by users. (+91-XXXXXXXXXX) 5+5**

**Ans 4.**

**a) Creating User-Defined Exceptions in Python**

Python allows developers to create user-defined exceptions to handle specific error scenarios in a program. This is achieved by defining a new class that inherits from Python's built-in Exception class. By raising these custom exceptions, developers can provide more meaningful error messages and control program flow.

For example:

class CustomError(Exception):

 def \_\_init\_\_(self, message):

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

**b) Discuss data preprocessing steps in details.**

**Ans 5.**

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

Game loops and event handling are critical components in game development, as they control the flow of the game and respond to user interactions, respectively.

The **game loop** is the backbone of any game, responsible for continuously running the core processes of the game until it is exited. It ensures that the game responds to inputs, updates the

**6.a) What are PEP8 guideline for formatting python code?**

**b) Explain CRUD operations.**

**Ans 6.**

**a) PEP8 Guidelines for Formatting Python Code**

PEP8 is the official style guide for Python code, promoting readability and consistency. It outlines best practices for writing clean and maintainable code. Key principles include:

* **Indentation**: Use four spaces per indentation level to improve code structure and readability.
* **Line Length**: Limit lines to 79 characters for better readability, particularly in narrow windows.
* **Blank Lines**: Separate top-level function and class definitions with two blank lines and