End Semester Examination 2025

Name of the Course: BCA.   Semester: 3

Name of the Paper: Python Programming   Paper Code TBC-304

Time: 3 Hours   Maximum Marks:100

Note

i. All Questions are compulsory

il. Answer any two sub questions among a, b and c in each main question.

iii. Total marks in each main question are twenty

iv. Each question carries 18 marks.

Q1		(10X2=20 Marks)	
(a)	Explain the various conditional statements in Python ilf, if-clse, if-eill-else) and how does the break statement differ from. the contrnue statement explain with suitable cyntus and examples.		CQ1
(b)	Describe the iteralfor statements in Python (for and while loop). Disease with example.		
(c)	Write a Python program to check if a number entered by the user is a Palradrome number.		
Q2		(10X1=20 Marks)	
(a)	Explain the principles of the 3 Built in methods available for strinss in Python.		
(b)	Describe the diferent modes in which a file can be opened in Python: Write a program to read a text file and show the data of the fills.		CO2
(c)	Write a Python program that takes a list of numbers and returns a new list with unique elements.		
Q2		(10X3=20 Marks)	
(a)	Explain the principles of Object-Oriented Programming (OOPs) Inheritance and Polymorphism, with examples in Python.		
(b)	Create a class Røshutale with attributes length and breadih. Implement methods to calculate area and pertmeter. Also overload the —operator to check if two rectangles have the same area.		CQ3
(c)	Write a Python program that demonstrates the use of try, except, and finally blocks for exception handling.		
Q4		(10X2=20 Marks)	
(a)	Differentiate between a terminal-based program and a GUI–based program. Write a program in creating a simple GUI-application using Tkinter.		CO4
(b)	Design a simple GUI application that has an entty field for the user to input their name and a button. When the button is clicked, it should display a greeting message in a label.		

(c)	What are pop-up dialog boxes? Design the GUI program that an entry field and a button, when you click the button a pop-up will appear on the window.	
Q 5	**(10X2=20 Marks)**	
(a)	Differentiate between a thread and a process. Explain the concept of multithreading in Python. Write a simple program to create two threads timt run concurently.	**C05**
(b)	Write a simple Day/Time server script and a corresponding client script to fetch the current time from the server	
(c)	Discuss the challenges of shared resources in multi-threading and how synchronization mechanisms like Locks can help.	