

Reg. No.: 22BLE11021

Name : SHUBHAM RAJ



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TERM END EXAMINATIONS (TEE) – January 2024

Programme	: B.Tech.	Semester	: Interim 2023-24
Course Title/ Course Code	: Python Programming/ CSE3011	Slot	: A14+E14+B14+F14+C1
Time	: 3 Hrs.	Max. Marks	: 100

Answer ALL the Questions

Q. No.	Question Description	Marks
PART A – (60 Marks)		
1	(a) Describe the fundamental control structures in Python, including, conditional statements, and various operators. Explain how these control structures contribute to efficient programming.	12
	OR	
	(b) What is the Left Shift (<<) Operator and explain it with example in details. Write a program to shift input data by four bits towards the left.	6+6
2	(a) Provide a comprehensive overview of Python's collections (Lists, Tuples, Sets, and Dictionaries) and, write an example program to highlight their distinctive features.	12
	OR	
	(b) Write the function <code>Add_Details()</code> to add a new entry, i.e. add a new name and phone number of a subscriber. Write a function <code>sub_Sort()</code> to sort the contents of the telephone directory in the ascending order.	6+6
3	(a) Create a Python class <code>Person</code> and define a <code>try-except</code> block inside an instance method <code>get_age()</code> to handle a <code>ValueError</code> when converting a string to an integer. Write a Recursive function in python Binary Search (Arr, l, r, x) to search the given element X to be searched from the List Arr having R elements, where l represent lower bound and R represents the upper bound.	4+8
	OR	
	(b) Create a Python program that demonstrates inheritance, polymorphism, and operator overloading also Show how a base class with derived classes exhibits inheritance, incorporate polymorphic behavior, and illustrate operator overloading for enhanced functionality	12
4	(a) What are file input and output operations in Python Programming and explain each operation with example code?	12
	OR	
	(b) Consider a scenario where a son eats five chocolates every day. The price of each chocolate is different. His father pays the bill to the chocolate vendor at the end of every week. Develop a program that can generate the bills for the chocolates and send to the father. Also state which loop will be used to solve this problem.	12
5	(a) Provide a comprehensive overview of the Tkinter module and explain how to create	12

and use widgets in a graphical user interface (GUI) using TKinter.

OR

- (b) Create a Python program that utilizes multithreading to run two functions concurrently. 6+6

Provide Python code for a simple server that listens on a specific port and receives messages from a client.

PART B – (40 Marks)

Write a program to display the pattern of numbers given as follows:

8

1
1 2
1 2 3
1 2 3 4
1 2 3
1 2
1

Write a program to pass a list to a function. Calculate the total number of positive and negative numbers from the list and then display the count in terms of dictionary.

8

Input: L=[1,-2,-3,4]

Output: {'Neg': 2, 'Pos': 2}

Define a Python class Shape with an abstract method `calculate_area()` and then create a subclass Rectangle that inherits from Shape and implements the `calculate_area()` method for a rectangle.

8

Demonstrate reading and writing operations in file. Create a Python program to connect to a MySQL database and execute a query.

8

What is Python CGI scripts and write the code for creating the following HTML page using CGI Script.

8

GeeksforGeeks

All The Best