Python Programming (MR25)

Assignment -1

1. Explain Python variables and data types with examples. CO1

2. Explain type casting in Python with examples. CO1

3. Differentiate between break, continue, and pass statements with examples. CO1

4. Write a program to calculate the factorial of a number using a **while loop**. CO1

5. Write a program to print a multiplication table using **nested loops**. CO1

6. What is the purpose of else clause for a loop? Explain how else works with for and while loops, with examples. CO1

7. Write a program to print all even and odd numbers between 1 and 20 using loops. CO1

8. Explain the main features of Python with examples. CO1

Assignment -2

1. Write a Python program to check whether a given string is a palindrome. CO2

2. Write a Python program to find the longest word in a given sentence. CO2

3. Explain list comprehension with an example. Write a program to generate a list of squares of numbers from 1 to 10. CO2

4. Differentiate between lists and tuples. Write a program to access elements using indexing. CO2

5. Write a Python program to create a tuple with numbers and print all the elements at odd indices. CO2

6. Write a Python program to find common elements between two sets and also find elements present only in the first set. CO2

7. Explain dictionary comprehension with an example. Write a program to create a dictionary of numbers and their squares from 1 to 10. CO2

8. Write a program to iterate over a dictionary and print keys and values. Explain two dictionary methods. CO2

Assignment -3

1. Explain the difference between defining a function with parameters and without parameters, with examples. CO3

2. Explain positional, keyword, default, and variable-length arguments with examples. CO3

3. Explain map(), filter(), and reduce() functions with examples using lambda. CO3

4. Write a recursive function to print fibonocci sequence. CO3

5. Write a recursive function to check whether the string is Palindrome or not. CO3

6. Write a program to create a user-defined module for mathematical operations (add, subtract, multiply, divide) and import it into another file. CO3

7. Differentiate between a Module and a Package in Python with an example. CO3

Assignment -4

1. Explain different file modes in Python with examples. CO4

2. Explain any five file methods with examples. CO4

3. Write a program that reads a file and displays the number of words, number of vowels, blank spaces, lower case letters and uppercase letters. CO4

4. Explain the flow of execution in try, except, else, and finally blocks with an example. CO4

5. Write a program that raises and handles a custom exception. CO4

6. Define error and exception. Differentiate them. CO4

7. Illustrate common regular expression symbols and special characters used in Python for string matching. CO4

Assignment -5

1. Explain the concept of class and object in Python with an example program. CO5

2. Write a program using a class Calculator to perform addition, subtraction, multiplication, and division. CO5

3. Discuss the difference between class variables and instance variables with examples. CO5

4. Explain the different types of inheritance in Python with examples. CO5

5. Write a program to demonstrate polymorphism using method overriding. CO5

6. Discuss how Python achieves polymorphism without method overloading. Give an example. CO5

7. Create a class Book with attributes title, author, and price. Write methods to display the book details and check if the book is expensive (price > 500). CO5