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Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Third Semester B.Tech (Minor) Degree Examination December 2023 (2022 Admission)

Course Code: CST283

Course Name: Python for Machine Learning

Max. Marks: 100

Duration: 3 Hours

PART A

Answer all questions. Each question carries 3 marks

Marks

- 1 Write the use of int () and float () built-in functions with examples. (3)
- 2 Compare and contrast interpreted language and compiled languages. (3)
- 3 Can a Python function return multiple values? If yes, explain how it works with the help of example? (3)
4. Explain the use of join () and split () string methods with examples. (3)
- 5 Write any 3 differences between tuple and list. (3)
- 6 How a set is created in python? Write two characteristics of sets. (3)
- 7 Write a python program to create a class point with attribute x_pont, y_point and methods to read and display the points. (3)
- 8 What is a constructor? Give an example (3)
- 9 Discuss the following methods of os module (3)
i) chdir() ii) listdir() iii) getcwd()
- 10 Write a program to add two 2x2 matrices numpy module. (3)

PART B

Answer any one full question from each module. Each question carries 14 marks

Module 1

- 11 a) What is a module? Write any 4 methods of math module. Write a program to find the a^b using math module. (7)

- b) Write the function of bitwise operator, identity operator and membership operator with example. (7)
- 12 a) Explain the following types of error with example. (6)
- i) Syntax error
 - ii) indentation error
 - iii) division by zero error
 - iv) name error
 - v) type error
 - vi) value error
- b) Explain the software development process with a neat figure. (8)

Module 2

- 13 a) Write a Python function that prints all factors of a given number which are divisible by 5. (7)
- b) Explain continue and break statements with examples. (7)
- 14 a) Write Python program that accepts a sentence and calculate the number of words, digits, uppercase letters and lowercase letters. (7)
- b) What is recursion? Write a recursive program to find factorial of a number (7)

Module 3

- 15 a) Write Python program to check for the presence of a key in the dictionary and find the sum of all values in the dictionary. (7)
- b) What is a tuple? Comment on the mutability of the tuple. Explain the tuple methods with example. (7)
- 16 a) Write any 6 list operations with example. (6)
- b) Write a Python program to find the largest and second largest of n numbers in a list. Assume $n \geq 3$ and all the numbers are distinct. (8)

Module 4

- 17 a) Write a syntax for following Exception Handling statements with example (6)
- i) try-except
 - ii) try-except-else
 - iii) try-except-else-finally

- b) Write Python Program to Calculate Area and Perimeter of different Shapes using Polymorphism. (8)
- 18 a) Define the terms class, attribute, method and instance with an example. (4)
- b) What is inheritance? Explain any multiple, multilevel and hierarchical inheritance with proper example. (10)

Module 5

- 19 a) Write a program to count the number of palindrome words in a text file. (8)
- b) What are binary files? Write the different file opening modes. (6)
- 20 a) What are the characteristics of a CSV file? Explain the different methods available for manipulating the CSV files. (6)
- b) Explain the datastructures used in Pandas with suitable examples. (8)