Reg No.:_____ Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Third Semester B.Tech (Minor) Degree Examination December 2021 (2020 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		Describe any three formats used with print statement	3
2		Explain with example the usage of any three methods from math module.	3
3		Write a Python program to find the sum of even digits in a number	3
4		Illustrate the use of functions with an example	3
5		Write a Python program to find the frequency of each word in a string using dictionary.	3
6		Distinguish between List and Tuple	3
7		Write a Python class Triangle with a constructor to initialize 3 sides(a,b,c) and a member function findArea() to compute and display the area of triangle.	3
8		Distinguish between accessors and mutators	3
9		Explain the following functions from os module getcwd() listdir() walk()	3
10		Write Python code to plot histogram of marks of students stored in a list L, with proper title, xlabel and ylabel using matplotlib library.	3

PART B

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

Module 1

11	a)	Describe the waterfall model of software development process with a neat figure.	9
	b)	Write a Python script to find nCr .Use math module to find the factorial	5
12	a)	Area of the circle given center point (x1,y1) and one point on the perimeter (x2,y2).	7
	b)	Discuss about identifiers , variables and keywords in Python	7

Module 2

13	a)	Write a Python program to print all prime numbers less than 1000.	7
	b)	Illustrate recursion and recursive function with a suitable example	7

14	a)	Write a Python program to convert a binary string to decimal	7
	b)	Demonstrate the use of Lambda function with an example	7

Module 3

15	a)	Write a Python program to read list of positive integers into a list and separate the prime and composite numbers into two different list.	6
	b)	Explain any four Set operations in python with examples	8
16	a)	Write a program to remove all duplicate elements from a list.(do not keep any copy of the repeating element) Hint: use set for efficient implementation	8
	b)	Explain any 3 formats to print current date in Python	6

Module 4

17	a)	Explain the concept of operator overloading	4
	b)	Implement a class Point which represent a point (x,y) in Cartesian coordinate. Use a constructor to initialize a point object and a member function to display the object values. Overload + operator to add two point object.	10
18	a)	Discuss the exception handling mechanism in Python with examples	8
	b)	Distinguish between function overloading and function over riding with examples	6

Module 5

19	a)	Illustrate numpy arrays with example. How indexing, slicing and sorting is done with examples	6
	b)	Write a python program to read numbers from a file named *num.txt*.Write all positive numbers from *num.txt* to a file named *positive.txt* and all negative numbers to a file *negative.txt*.	8
20	a)	Explain how the matrix operations are done using numpy arrays	6
	b)	There exist a CSV file 'student.csv' with the following columns(rno,name,m1,m2,m3). Write commands to do the following using pandas library. a) Read and display the first 10 rows of CSV file b) Display the rno and name in the sorted order of name c) Add a new column total(m1+m2+m3) to the data frame d) Display rno,name and total marks of all the students in the descending order of total marks e) Find the mean and variance of mark m1 f) Find the highest and lowest mark in m2. g) Plot the marks m3 against name h) store the data frame in a new CSV file 'studentnew.csv'	8

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