Reg No.:_____ Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Third Semester B.Tech (minor) Degree Examination December 2020

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	Explain the input statement with an example. How the type conversion is done		3
2	Illustrate the concept of modules and explain with example how they are used in Python programs		3
3	Write a Python program to print all prime numbers less than 100.		3
4	Demonstrate Lambda function with an example		3
5	Use list to read n names and print the names in alphabetical order		3
6	Let D ={'a':10,'b':20} be a dictionary. Write commands to a) Add a new key value pair('c':30) b) Update the value correspond to the key 'a' to 100 c) Remove the entry corresponds to the key 'b'		3
7	Write a Python class named 'Circle' with attribute radius and two methods which will compute the area and the perimeter of a given circle.		3
8	Describe the exception handling mechanism in Python with an example		3
9	Illustrate numpy arrays with example. How indexing,slicing and sorting is done with examples.		3
10	Write Python code to plot a sin wave (from 0 to 2*pi) using matplotlib library with proper title, xlabel and ylabel.		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 the number of digits in the factorial of a given number.(Use python built-in modules functions)	5

12	a)	Write a program to find the Area of a circle given its circumference	7
	b)	List the different types of operators in Python	7

Module 2

13	a)	Generate the Fibonacci series upto n.(0 1 1 2 3 5....n)	7
	b)	Explain with an example ,the use of functions and how functions are defined and called in Python.	7
14	a)	Given three points (x1,y1) ,(x2,y2) and (x3,y3), check whether they form a triangle using a python script.	7
	b)	Explain recursion with an example and mention the advantages and disadvantages of recursion	7

Module 3

15	a)	Write a program to find the median of list of numbers using lists	6
	b)	Explain any four set operations in python with examples	8
16	a)	Write a Python code to create a function called frequency that takes a string and prints the letters in non-increasing order of the frequency of their occurrences. Use dictionaries.	8
	b)	Distinguish between Tuple and Lists	6

Module 4

17	a)	Illustrate Polymorphism and Operator overloading.	4
	b)	Implement a Complex class to read and display complex numbers with real and imaginary parts are attributes. Overload + operator to add two complex numbers.	10
18		Explain inheritance and different forms of inheritance .How they are implemented in Python.	14

Module 5

19	a)	Explain any 3 methods of os and sys module.	6
	b)	Write a Python program to create a text file. Read the contents of the file, encrypt every character in the file with a distance of 3 and write it to a new file. Eg:yak is encrypted as bdn.	8
20	a)	Discuss about data analysis and visualization in Python	7
	b)	There exist a CSV file stud.csv with following columns(rno,name,place,mark) of n students. Write commands to do the following using pandas library. a) Read and display the content of stud.csv file	7

b) Display the top 10 rows

c) Display the students list in the order of name

d) Display the students list in the descending order of marks

e) Display the maximum mark and average mark

f) Plot the histogram of mark

g) Remove the column titled place.

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