

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 <ul style="list-style-type: none"> <li>a) Add a new key value pair('c':30)</li> <li>b) Update the value correspond to the key 'a' to 100</li> <li>c) Remove the entry corresponds to the key 'b'</li> </ul>	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 as 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. 7  
a) Read and display the content of stud.csv file

- 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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