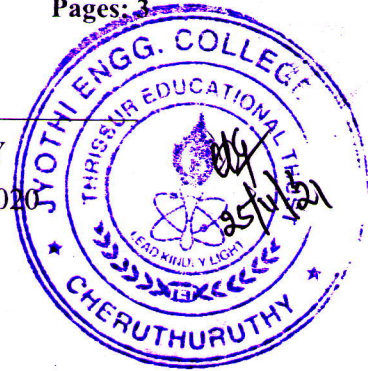


Reg No.: _____

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"> 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

0800CST283122001

- 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

0800CST283122001

- 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.
