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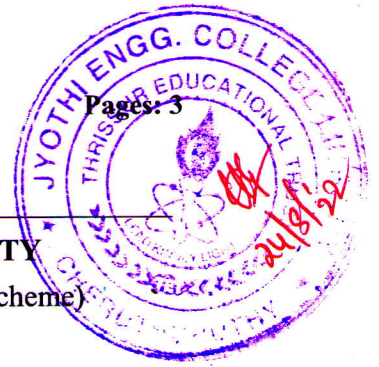
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**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**  
Sixth Semester B.Tech Degree Examination June 2022 (2019 Scheme)



**Course Code: CST362**

**Course Name: PROGRAMMING IN PYTHON**

Max. Marks: 100

Duration: 3 Hours

**PART A**

*Answer all questions, each carries 3 marks.*

Marks

- 1 What is the output of the following print statement in Python? (3)  
(a) print (9//2) (b) print (9/2)
- 2 Write a Python program to count number of even numbers and odd numbers in a given set of n numbers. (3)
- 3 Illustrate the use of negative indexing of list with example. (3)
- 4 Write Python code for the following statements (3)  
i) writes the text "PROGRAMMING IN PYTHON" to a file with name code.txt  
ii) then reads the text again and prints it to the screen.
- 5 List any three image processing Python libraries. (3)
- 6 List the steps to create a GUI application using Tkinter (3)
- 7 How to create a destructor in Python? Give an example. (3)
- 8 Write a Python class which has two methods get\_distance and print\_distance. (3)  
get\_distance accept a distance in kilometres from the user and print\_distance print the distance in meter.
- 9 How do you assign a random number to a variable in Python? (3)
- 10 What is the use of os module in python? (3)

**PART B**

*Answer one full question from each module, each carries 14 marks.*

**Module I**

- 11 a) Write a python program to generate the following type of pattern for the given N (6)  
rows .  
1  
1 2  
1 2 3  
1 2 3 4

- b) Mention the different types of loop and control statements allowed in Python (8) and explain each type with suitable examples.

**OR**

- 12 a) Write the python program to print all prime numbers less than 1000. (7)  
b) Write a Python program to find distance between two points (x1,y1) and (x2,y2). (7)

**Module II**

- 13 a) Write a Python program to count how many times each character appears in a given string and store the count in a dictionary with key as the character. (7)  
b) Create a function min\_max() that takes n numbers as list argument and return the smallest and largest numbers. (7)

**OR**

- 14 a) Write a Python program to read n integers into a list and separate the positive and negative numbers into two different lists. (7)  
b) Create a dictionary of names and birthdays. Write a Python program that asks the user to enter a name, and the program display the birthday of that person. (7)

**Module III**

- 15 a) How to draw a star shape using turtle in Python. (5)  
b) Explain basic image processing with inbuilt functions in Python. (9)

**OR**

- 16 a) Write Python GUI program to take the birth date and output the age when a button is pressed. (7)  
b) How do you display an image in Python GUI?. (7)

**Module IV**

- 17 a) Demonstrate how polymorphism can be implemented using function overloading with suitable example. (7)  
b) Illustrate with a real life example how multi-level inheritance is implemented in Python. (7)

**OR**

- 18 a) Create an Abstract Base Class called Shape that include abstract methods area() and circumference(). Then derive two classes Circle and Rectangle from the Shape class and implement the area() and circumference() methods . Write a Python program to implement above concept. (7)  
b) How exceptions are handled in Python?. Illustrate with the help of an example. (7)

**Module V**

- 19 a) Explain how the matrix multiplications are done using numpy arrays. (7)  
b) How to plot two or more lines on a same plot with suitable legends, labels and a title. (7)

**OR**

- 20 a) Consider a CSV file 'employee.csv' with the following columns(name, gender, start\_date ,salary, team). (8)

Write commands to do the following using panda library.

1. print first 7 records from employees file
  2. print all employee names in alphabetical order
  3. find the name of the employee with highest salary
  4. list the names of male employees
  5. to which all teams employees belong
- b) Write Python program to write the data given below to a CSV file (6)

Reg_no	Name	Sub_Mark1	Sub_Mark2	Sub_Mark3
10001	Jack	76	88	76
10002	John	77	84	79
10003	Alex	74	79	81

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