

Register No.: Name:

SAINTGITS COLLEGE OF ENGINEERING (AUTONOMOUS)

(AFFILIATED TO APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY, THIRUVANANTHAPURAM)

THIRD SEMESTER B.TECH DEGREE EXAMINATION (Regular), DECEMBER 2023

(2020 SCHEME)

Course Code : 20CST283

Course Name: Python for Machine Learning

Max. Marks : 100

Duration: 3 Hours

PART A

(Answer all questions. Each question carries 3 marks)

1. What do we call it when we convert from one data type to another? Give an Example.
2. What is the use of string modulo operator? Write a python program to print , **Messi is an Argentina Player.** (input : Name ="Messi" , Team="Argentina"]
What is mean by %5.2f ?
3. What is lazy evaluation? Define a **Max** lambda function to find the maximum of two integers.
4. What is Data Hiding? List two advantages and disadvantages of data hiding.
5. What is mean by slicing and Explain a negative indexing with an example.
6. What are Dictionaries; How to Perform a Reverse Dictionary Lookup in Python?
7. Write a note on Abstract Classes in Python and how Abstract Base classes work ?
8. What are instance variables in Python? How does it differ from Class Variable ? Write syntax.
9. What are the differences between **OS** and **sys** modules in Python? Write a program to make directory named " Minor", and create subdirectory named "Python for Machine Learning".
10. Assume that you have loaded a dataset "example.csv" using pandas. Write the Python Commands to do the following tasks:
(i) To get a statistical summary of the data
(ii) For plotting pairs of attributes as scattered plot, (assuming Address and Gender are two among the attributes) to be plotted explicitly.

PART B

(Answer one full question from each module, each question carries 14 marks)

MODULE I

11. a) An Employee's total weekly pay equals the hourly wage multiplied by the total hours worked plus any overtime pay. Overtime pay equals the total overtime hours multiplied by 1.5 times the hourly wage. Write a Python Program that takes as inputs hourly wage, total (7)

regular hours and total overtime hours and displays an employee's total weekly pay.

- b) Explain different operators available in Python programming language (7)

OR

12. a) Explain Built-in Functions, Modules and Packages;
Write a program to find the number of digits in the factorial of a given number. (4+4)
- b) (i) Write a python program to calculate number of minutes in a Year (Let 1 year = 365 days 5 hours 48 minutes 46 seconds) (3+3)
(ii) Write a python program to find area and perimeter of a right angled triangle given width(w) and height(h).

MODULE II

13. a) Write a python program to check whether a given year is Leap Year or not. A year is leap year if following conditions are satisfied (8)
1) Year is multiple of 400
2) Year is multiple of 4 and not multiple of 100.
- b) Write a python program that accepts the length of three sides of a triangle as input and determine whether or not the triangle is a right triangle. (6)

OR

14. a) Write a python program to check whether the given number is a Krishnamurti number (Krishnamurthy Number: It is a number which is equal to the sum of the factorials of all its digits.)-Use a recursive function fact() to find the factorial. (7)
- b) Write a python function to generate first N Fibonacci numbers and return as a list. (7)

MODULE III

15. a) Write a Python program to check the validity of a password given by the user. (refer example)
• The Password should satisfy the following criteria:
-Contains at least one letter between a and z
-Contains at least one number between 0 and 9 (10)
-Contains at least one letter between A and Z
-Contains at least one special character from \$, #
-Minimum length of password: 6
- b) Read a string which consist of lower case/ uppercase letters and digits. Write a program to count each. Use string functions (islower(), isupper(), isdigit()) (4)

OR

16. a) A bookshop details contains the Title of the book and Number of copies of each title. As books are added to the shop, the number of (7)

copies to each should increase and as books are sold, the number of copies in each should decrease. Implement this scenario using dictionary data type in Python.

- b) Write a Python program to completely remove duplicate elements without keeping any copy. (7)

MODULE IV

17. a) Write a Python program to create class named Circle constructed by a radius and two methods which will compute the area and the perimeter of a given circle. (7)
- b) Write a Python program to create a class Rectangle A constructor is used to initialize the object values. Member function area() to compute the area of the rectangle. (7)

OR

18. a) Write a Python program to create a class student with attribute name and roll number and a method dataprint() for displaying the same. Create two instance of the class and call the method for each instance. (7)
- b) Write a Python program to create a class Person with attributes name, age salary and a method display() for showing the details. Create two instances of the class and call the method for each instance. (7)

MODULE V

19. a) Write a python program to find eigen values and eigen vector for the given matrix $\begin{bmatrix} 2 & 3 & 5 \\ 3 & -2 & 1 \\ 1 & 5 & 7 \end{bmatrix}$ (7)
- b) Write a Python program to store lines of text into a file. Read the file and display only the palindrome words in the file. (7)

OR

20. a) write a program to read numbers stored in one file and store the sorted numbers in another file after deleting duplicates. (7)
- b) Write Python program to write the data given below to a CSV file.

SN	Name	Country	Contribution	Year	
1	Linus Torvalds	Finland	Linux Kernel	1991	
2	Tim Berners-Lee	England	World Wide Web	1990	(7)
3	Guido van Rossum	Netherlands	Python	1991	
