R20 Regulation *Subject code: 3P5FB*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A+' Grade)

B.Tech V Semester Regular/Supplementary Examinations, February 2024

PYTHON PROGRAMMING

(Information Technology)

Maximum Marks: 70 Date:17.02.2024 Duration: 3 hours

Note: **1.This question paper contains two parts A and B.**
2. Part A is compulsory which carries 20 marks. Answer all questions in Part A.
3. Part B consists of 5 Units. Answer any one full question from each unit.
4. Each question carries 10 marks and may have a, b, c, d as sub questions.

	Part-A	CO	Bloom Tx
All the following questions carry equal marks (10x2M=20 Marks)			
1	What is the significance of the "identity operators" in Python?	1	L1
2	List the Built-in Data types in Python.	1	L1
3	Write the importance of the "Range" function in conditional control structures.	2	L2
4	Explain the purpose of the "pass" statement in Python. Provide an example scenario where it might be useful.	2	L3
5	List the difference between the "append()" and "extend()" methods when manipulating lists in Python.	3	L2
6	How do you access elements in a tuple in Python?	3	L3
7	Explain the actual arguments in Python functions.	4	L2
8	Write a Python function that takes multiple arguments.	4	L4
9	List the advantages of NumPy arrays over regular Python lists.	5	L3
10	How can you handle missing data in a Pandas Data Frame?	5	L3
	Part-B		
Answer All the following questions. (5X10M=50Marks)			
11	A. Explain the rules for naming identifiers in Python and provide examples of valid identifiers. [5] B. Discuss the significance of Arithmetic operators in Python. Provide examples illustrating their application. [5]	1 1	L2 L2
	OR		
12	A. Discuss the characteristics and use cases of the bool data type in Python, providing examples. [5] B. Discuss the significance of membership operators (in and not in) in Python. Provide examples illustrating their application. [5]	1 1	L2 L2
13	A. Explain the syntax and usage of the "if" statement in Python. Provide an example scenario where the "if" statement is necessary. [5] B. Evaluate the advantages and disadvantages of using "for" loops versus "while" loops in different programming scenarios. Provide specific examples to support your evaluation. [5]	2 2	L2 L5
	OR		

14	A. Differentiate between the "if-else" statement and the "else if" statement in Python. Provide examples to illustrate their distinctions and use cases. [5] B. Explain the roles of "pass," "continue," and "break" statements in Python loops. Provide examples demonstrating their application. [5]	2 2	L4 L5
15	A. Describe the process of creating a list in Python and provide examples of different methods for list manipulation, including index(), append(), and extend(). [5] B. Describe the array operations using NumPy in Python. Create a NumPy array and demonstrate the processes of transpose, addition, and multiplication of matrices using NumPy functions. [5]	3 3	L3 L3
	OR		
16	A. Explain the significance of nested lists in Python. Provide an example of a nested list and discuss its practical application. [5] B. Discuss the indexing and slicing operations on arrays in Python. Provide examples to illustrate how these operations are carried out. [5]	3 3	L3 L3
17	A. Explain the process of creating a string in Python and demonstrate the use of indexing(), slicing(), and concatenation(). [5] B. Explain the concept of a powerful Lambda function in Python. Provide an example demonstrating its usage. Discuss the characteristics of recursive functions in Python and provide an example of a recursive function. [5]	4 4	L3 L3
	OR		
18	A. Discuss various string methods in Python, such as length(), repeating(), comparing(), and removing spaces. Provide examples illustrating the use of each method. [5] B. Discuss the concept of first-class objects in Python functions. Explain how functions can be passed as arguments and returned as values. [5]	4 4	L3 L4
19	A. Explain the process of creating and arrays in NumPy and provide examples of different ways to create them. [5] B. Discuss the role of index objects in Pandas. Provide examples demonstrating how index objects are used. [5]	5 5	L3 L4
	OR		
20	A. Discuss the concept of data types for nd arrays in NumPy. Provide examples demonstrating the use of different data types. [5] B. Explain the concepts of Pandas Series and Data Frame. Provide examples illustrating their creation and usage. [5]	5 5	L3 L3