Regulation R20 *Subject code: 3O6AE*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech VI Semester Supplementary Examinations, February 2024

Python Programming
(Civil Engineering)

Maximum Marks: 70 Date:27.02.2024 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 which carries 10M.
4. Each question carries 10 marks and may have a, b, c, d as sub questions.

Part-A

	All the following questions carry equal marks (10X2M=20 Marks)	CO	Bloom Tx
1	What is the purpose of pseudocode in algorithmic problem solving?	1	L1
2	How do programming languages contribute to algorithm development?	1	L1
3	What is the purpose of comments in Python code?	2	L1
4	How is a function defined and used in Python?	2	L1
5	What is the purpose of the "if-else" statement in Python? Provide an example.	3	L1
6	Write the concept of fruitful functions and their role in Python.	3	L1
7	Write the concept of list slices in Python. How are they used to extract subsets of a list?	4	L1
8	What is aliasing in the context of lists? Provide an example to illustrate aliasing.	4	L1
9	What are command line arguments in Python?	5	L1
10	Discuss the concept of modules in Python.	5	L1

Part-B

	Answer All the following questions. (10MX 5=50Marks)		
11	Describe the building blocks of algorithms and how they contribute to problem solving. (10)	1	L2
	OR		
12	Explain the concept of iteration as a strategy for developing algorithms. Discuss different types of loops and provide examples of how iteration can be used to solve problems effectively. (10)	1	L3
13	Explain the purpose and usage of comments in Python code. Discuss how comments can improve code readability, provide explanations, and make code more maintainable. (10)	2	L2
	OR		
14	Provide an illustrative program that calculates the distance between two points. Discuss the mathematical formula used and explain the steps involved in the program. (10)	2	L3

15	Discuss the purpose and usage of the "if-else" statement in Python. Provide an example scenario where it would be appropriate to use an "if-else" statement. (10)	3	L2
	OR		
16	Explain the concept of local and global scope in Python functions. Discuss how variables declared inside a function have local scope, while variables declared outside have global scope. Provide examples to illustrate the difference. (10)	3	L3
17	Discuss list slices in Python. Explain how list slices are used to extract subsets of a list based on specified start and end indices. Provide examples to demonstrate the usage of list slices. (10)	4	L2
	OR		
18	Explain how aliasing occurs when multiple variables refer to the same list object. Discuss the potential issues and pitfalls of aliasing in list manipulation. (10)	4	L2
19	Explain how command line arguments are passed to a Python program and how they can be accessed and utilized within the program. (10)	5	L2
	OR		
20	Explain the concept of text files in Python. Discuss how text files are used to store and manipulate textual data. Describe the process of reading data from a text file and writing data to a text file using Python. Provide examples to illustrate file reading and writing operations. (10)	5	L2