R22 Regulation *Subject code:4E2AT*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech II Semester Supplementary Examinations, June 2026

PROBLEM SOLVING USING PYTHON

(IT)

Maximum Marks: 60 Date: 15.06.2026 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

All the following questions carry equal marks (10X1M=10 Marks)		Marks	CO	BTL
1.a	How does flow of control work in Algorithm?	1M	1	L1
b	Write an algorithm to find smallest among three numbers.	1M	1	L1
c	List out four built in data types in Python.	1M	2	L5
d	How do you assign a value to a tuple in Python?	1M	2	L1
e	Write a for loop that prints numbers from 0 to 57, using range function.	1M	3	L1
f	Explain the difference between local and global scope.	1M	3	L2
g	Give examples for mutable and immutable objects.	1M	4	L1
h	Let list t = ['a','b','c','d','e','f']. Find the following a) t[1:3] b) t[:4]	1M	4	L4
i	How does try and except statement works?	1M	5	L2
j	How do you handle the exception inside a program when you try to open a non-existent file?	1M	5	L2

Part-B

Answer All the following questions. (5X10M=50Marks)		Marks	CO	BTL
2	Explain a recursive algorithm to compute the n^{th} Fibonacci number and analyze its time complexity.	10M	1	L2
	OR			
3	Discuss in detail about building blocks of algorithms.	10M	1	L2
4	Explain in detail about precedence of python operators and the associative of python operators.	10M	2	L2
	OR			
5	Outline the data types supported by Python with example	10M	2	L2
6	What is string function in python? Explain any three Python string methods with an example.	10M	3	L2
	OR			

7	a) Write a python program to print all prime numbers less than 512. b) With syntax, explain the finite and infinite looping constructs in python. What is need for break and continue statements?	5M 5M	3	L3 L2
8	Explain a python program to split a given dictionary of lists into list of dictionaries using map function.	10M	4	L2
	OR			
9	Write a python program to create a dictionary and sort the content based on values in reverse order.	10M	4	L2
10	Name the different access modes for opening a file and present an outline of the same	10M	5	L3
	OR			
11	What is package in python? Explain in detail about how to create a package and use the package in python	10M	5	L2