

# SHAMBHUNATH INSTITUTE OF ENGINEERING AND TECHNOLOGY

Subject Code: BCC302

Course: B. Tech.

Subject: Python Programming

SEMESTER: III

FIRST SESSIONAL EXAMINATION, EVEN-SEMESTER, (2023-2024)

Branch: Computer Science & Engineering

Time -1hr 30minutes

Maximum Marks -30

1. Attempt any five questions.

Q N	QUESTION	Marks	CO	BL
a.	Define the programming cycle for Python.	2	CO1	L1
b.	Explain Arithmetic Operators with Addition, Subtraction, Multiplication and Power.	2	CO1	L1
c.	What do you mean by Python IDE? Explain in detail.	2	CO1	L2
d.	Discuss why python is interpreted language.	2	CO1	L1
e.	Difference between the append() and extend() method of a List.	2	CO1	L1
f.	Compare list and dictionary data structure.	2	CO1	L3

2. Attempt any one of the following.

Q N	QUESTION	Marks	CO	BL
a.	Write and explain an algorithm through python code to generate prime numbers.	5	CO1	L2
b.	Discuss the purpose of the pass, break and continue statement in loops with examples.	5	CO1	L4
c.	Write a program to calculate the sum of all numbers from 1 to a given number.	5	CO1	L4

3. Attempt any five questions.

Q N	QUESTION	Marks	CO	BL
a.	What is the use of dictionary in Python?	2	CO2	L1
b.	What are logical operators and bitwise operators in python?	2	CO2	L3
c.	Write a program to print first 10 natural numbers using while loop.	2	CO2	L1

d.	What are user-defined exceptions? Give one example.	2	CO4	L3
e.	Define ADT interface.	2	CO4	L1
f.	What are the various file positions methods?	2	CO4	L2

4. Attempt any one of the following.

a.	Discuss file I/O in Python. How to perform open, read, write, and close into a file? Write a Python program to read a file line-by-line store it into a variable.	5	CO4	L4
b.	Explain the terms Merge List and Merge Sort in Python Programming.	5	CO4	L5
c.	Discuss sorting and merging. Explain different types of sorting with example. Write a Python program for Sieve of Eratosthenes.	5	CO4	L3

5. Attempt any five questions.

Q N	QUESTION	Marks	CO	BL
a.	Explain why Python is considered an interpreted language.	2	CO5	L1
b.	What is Python Matplotlib?	2	CO5	L2
c.	Differentiate Between Pandas and NumPy.	2	CO5	L3
d.	Is Pandas as fast as NumPy? No	2	CO5	L2
e.	What is Tkinter and Widgets?	2	CO5	L1
f.	How can you initialize a 5*5 numpy array with only zeroes?	2	CO5	L2

6. Attempt any one of the following.

Q N	QUESTION	Marks	CO	BL
a.	Print the following pattern: A B C D E F G H I J K L M N O P Q R S T U	5	CO5	L4
b.	How to Create a GUI in Python using Tkinter.	5	CO5	L6
c.	How to create a new column in pandas by using values from other columns?	5	CO5	L3

list, dictio, double, string set