

CDOE
MASTER OF COMPUTER APPLICATIONS (CBCS - 2020 COURSE)
M.C.A. Sem-II : WINTER :- 2021
SUBJECT: DATA STRUCTURES USING PYTHON

Day : Wednesday
Date 9/2/2022

W-23058-2021

Time : 02:00 PM-05:00 PM
Max. Marks: 60

N.B.

- 1) **Q.No. 4** from Section-I is **COMPULSORY**.
- 2) Attempt **ANY TWO** questions from Q.No. 1 to Q. No. 3 in Section – I.
- 3) Attempt **ANY TWO** questions from Q.No. 5 to Q. No. 7 in Section – II.
- 4) Figures to the **RIGHT** indicate **FULL** marks.
- 5) Answers to both the sections should be written in **SEPARATE** answer book.
- 6) Draw a labeled diagram **WHEREVER** necessary.

SECTION – I

- Q.1** Answer the following : (12)
a) Describe various arithmetic operators in python.
b) What is type conversion? Explain the mechanism to convert types in Python.
- Q.2** Answer the following : (12)
a) Illustrate how python supports variable number of arguments in function with suitable example.
b) Describe dictionary data type in python.
- Q.3** Answer the following : (12)
a) What is exception? List various types of exceptions that can occur in Python.
b) Explain the usage of 'with clause'.
- Q.4** Write short notes on **ANY THREE** of the following : (12)
a) Set data structure
b) Abstract Data Types
c) AVL tree
d) Skip lists
e) Built-in functions

SECTION – II

- Q.5** Answer the following : (12)
a) What is the importance of balanced trees? Explain Red black trees.
b) Differentiate between an Array and Linked list.
- Q.6** Answer the following : (12)
a) Write a program to implement doubly link list using Python.
b) Discuss on python support to read and write CSV files.
- Q.7** Explain the following : (12)
a) What is sorting? Write a program to implement insertion sort.
b) Explain different ways to measure the efficiency of an algorithm.
