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MANIPAL INSTITUTE OF TECHNOLOGY

MANIPAL

(A constituent institution of MAHE, Manipal)

IV SEMESTER B.TECH. OPEN ELECTIVE

END SEMESTER EXAMINATIONS, APRIL/MAY 2018

SUBJECT: PYTHON PROGRAMMING (CSE 3292)

REVISED CREDIT SYSTEM

(30/04/2018)

Time: 3 Hours

MAX. MARKS: 50

Instructions to Candidates:

- ❖ Answer **ALL** the questions.
- ❖ Missing data may be suitably assumed. You may draw pictorial representations and algorithms to justify your code.

- 1A. Explain the following kinds of “for” loops that does not make use of range constructs or any other function calls in the “for” statement. Give example code for each one to demonstrate traversal of individual elements in the given data structure.
- i) For loop in lists
 - ii) For loop in files
 - iii) For loop in database tables
- 6
- 1B. Why Python language cannot be treated as Type-safe language. Explain with an example.
- 2
- 1C. With an example, distinguish between “del” and “remove” while applied to lists.
- 2
- 2A. Using slice operator write single Python statement to perform each of the following operations for a list x initialized with numbers 1 to 4.
- i) Concatenation of x with elements [5, 6, 7]
 - ii) insert [-1, 0] at the beginning of list x
 - iii) retain list x with only 2 elements- first and last
- 3
- 2B. Explain how variable number of arguments be passed to a function? Illustrate the feature in a function named “longest” that receives variable number of string arguments to return the size of the longest string. Show its usage.
- 5
- 2C. If list1 and list2 are declared as two lists, then pictorially illustrate the distinction between the statements list1 = list2 and list1 = list2[:]
- 2
- 3A. Write a Python function named Search which will take the given Word and a Letter as its argument and using “while” loop returns the index of the first occurrence of
- 3

Letter in the given Word or returns -1 if the Letter is not present. Show usage of the function in main.

- 3B. What do you mean by immutability of string objects? Illustrate immutability of Python strings with an example code that gives error and describe a solution for the same to override the error. 3
- 3C. Give an example code to create and initialize elements into a list, tuple, tuples inside a list and a dictionary. What is the similarity between a list and a tuple? 4
- 4A. What is the difference between a module and a function in Python? If you have a collection of functions which you want to make use in other python programs, what are the different ways to make those functions available? 3
- 4B. Explain three different basic file access modes that are available in Python. Write a Python program to copy the content of file1 onto file2 as well as to a tuple t by using “for” statement that does not make use any form of read statements. Note that no other data structure is allowed other than the tuple. 5
- 4C. For the following Python statements, clearly show output
import numpy as np
a = np.array([[1, 2, 3], [4, 5, 6],[7, 8, 9]], int)
print("a[:2, 1:]=\n ", a[:2, 1:])
print("a[2:]=\n", a[2:])
print (" a[2, :]=\n", a[2, :])
print (" a[2:,:]=\n", a[2:,:]) 2
- 5A. How do you set up data base programming in Python to execute queries? Write a program to create a Student table with three fields – student Id, first name, last name and display the contents of the table onto the screen. 3
- 5B. Construct a GUI application to take student name and branch from the user. Include two buttons, “Quit” and “Print” and implement the respective functionalities. Make use of only grid manager in your code and provide precise layout. Also bind functionality to the “Print” button in such way that student name and branch should be displayed with its corresponding values that are entered from the user. Discuss the advantages of grid geometry manager over pack manager in this layout. 4
- 5C. What are Common Gateway Interfaces (CGI)? Briefly mention advantages and disadvantages of CGI programs. 3