

I B. Tech II Semester Regular/Supplementary Examinations, July/August-2023**PYTHON PROGRAMMING**

(Common To CSE, IT, CSE-AI&ML, CSE-AI, CSE-DS, CSE-AI&DS, AI&DS)

Time: 3 hours

Max. Marks: 70

*Answer any five Questions one Question from Each Unit**All Questions Carry Equal Marks***UNIT-I**

- 1 a) Discuss the int(), float(), str(), chr(), ord(), hex(), oct(), and complex() type conversion functions with examples. [7M]
- b) Write a program to print the sum of the following series $1 + 1/2 + 1/3 + \dots + 1/n$ [7M]

(OR)

- 2 a) Write Python code to solve the quadratic equation $ax^2 + bx + c = 0$ by getting input for coefficients from the user. [7M]
- b) Write a Python program that reads four integers from the user, and prints them with a single print statement, without any space or newline between/after the values. [7M]

UNIT-II

- 3 a) Illustrate the different types of control flow statements available in Python with flowcharts. [7M]
- b) Write a function that receives a variable number of strings as arguments. Find unique characters in each string. [7M]

(OR)

- 4 a) Explain with an example, how + and * operators work with strings. [7M]
- b) demonstrate the following functions/methods which operates on strings in Python with suitable examples: [7M]
- i) len() ii) strip() iii)rstrip() iv) lstrip() v) find() vi) rfind() vii) index() viii) rindex().

UNIT-III

- 5 a) What are modules in python? How will you import them? Explain the concept by creating and importing a module. [7M]
- b) Define Dictionary in python. Do the following operations on dictionaries. [7M]
- i) Initialize two dictionaries with key and value pairs.
- ii) Compare two dictionaries with master key list and print missing keys.
- iii) Find keys that are in first and not in second dictionary.
- iv) Find same keys in two dictionaries.
- v) Merge two dictionaries and create a new dictionary using a single expression

(OR)

- 6 a) What is the need of Unicode? Explain the following list of methods with an example. a) append() b) extend() c) insert() d) index() e) sort() [7M]
- b) Write the importance of packages in Python. Explain suitable example and program. [7M]

UNIT-IV

7 a) Discuss the following methods associated with the file object [7M]
a) read() b) readline() c) readlines() d) tell() e) seek() f) write()

b) What are the different types of inheritance supported by Python? Explain. [7M]

(OR)

8 a) Explain about the file reading and writing operations using format operator with python code? [7M]

b) Explain Constructor in python. Illustrate with an example. [7M]

UNIT-V

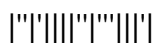
9 a) Write about Errors and Exception Handling in Python programming. [7M]

b) Explain about Radio button widget in tkinter. How to create two radio button sets (one for gender and another for Indian or not) on the same canvas. [7M]

(OR)

10 a) Write a Python program to handle multiple exceptions. [7M]

b) Discuss clean-up and Redefined clean-up actions in Python? [7M]



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UNIT-I

- 1 a) Write a python program to convert Celsius to Fahrenheit. (Formula: Celsius * 1.8 = Fahrenheit –32). [7M]
 b) What is an interactive Python shell? What is the significance of indentation in writing Python programs? [7M]

(OR)

- 2 a) List down the different types of operators and their function with suitable examples. [7M]
 b) Write a function find_index(), which returns the index of a number in the Fibonacci sequence, if the number is an element of this sequence and returns -1, if the number is not contained in it, call this function using user input and display the result. [7M]

UNIT-II

- 3 a) Write a Python program to sort words in a sentence in decreasing order of their length. Display the sorted words along with their length. [7M]
 b) Write a Python program that prints the multiplication table of a given number. [7M]

(OR)

- 4 a) Explain with an example while loop, break statement and continue statement in Python. [7M]
 b) Write a short note on Python strings? [7M]

UNIT-III

- 5 a) Appraise the operations for dynamically manipulating dictionaries. [7M]
 b) Write a Python program to perform linear search on a list. [7M]

(OR)

- 6 a) Write a recursive Python function that recursively computes the sum of elements in a list of lists. ample Input: [1, 2, [3,4], [5,6]] Expected Result: 21 [7M]
 b) What is a Module in python? Explain how can you use modules in your program explain with an example code. [7M]

UNIT-IV

- 7 a) Describe the different access modes of the files with an example. [7M]
 b) Write a script illustrating multiple inheritances. [7M]

(OR)

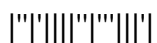
- 8 a) Write Python Program to Count the Occurrences of Each Word and Also Count the Number of Words in a “quotes.txt” File. [7M]
 b) Discuss Overlapping and overloading operators in python. Write a Python program that overloads + operator, to add two objects of a class. [7M]

UNIT-V

- 9 a) Write about use defined exceptions in Python. Write program to illustrate the exception handling. [7M]
- b) Write a Python program that creates a GUI with a textbox, Ok button and Quit button. On clicking Ok, the text entered in textbox is to be printed in Python shell; on clicking Quit, the program should terminate. [7M]

(OR)

- 10 a) What happens if except clause is written without any Exception type? Explain with an example. [7M]
- b) Write the following. [7M]
- i) Construct the Tk Frame with a Menu.
- ii) Construct a tkinter window that contains Label, Entry, Check button, Radio button.



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UNIT-I

- 1 a) Explain how an input and output function is performed in python with an example. [7M]
 b) Write a python program to display whether the number is Armstrong number or not? [7M]

(OR)

- 2 a) What kind of repetition structures are used in Python. Illustrate each with suitable examples. [7M]
 b) Write a Python program to find those numbers which are divisible by 2 and multiples of 3, between 1 and 500. [7M]

UNIT-II

- 3 a) Write a Python program to exemplify various Loop statements. [7M]
 b) Write a Python program to construct the following pattern, using a nested for loop. [7M]

```
*
* *
* * *
* *
*
```

(OR)

- 4 a) What is meant by Data Encryption? What are its types? What are the libraries available in Python for Data Encryption? [7M]
 b) Write a Python program to compute the natural logarithm of 2, by adding up to n terms in the series $1 - 1/2 + 1/4 - 1/8 + 1/16 - \dots + 1/n$ where n is a positive integer and input by user. [7M]

UNIT-III

- 5 a) Give a comparison between lists, tuples and dictionaries. [7M]
 b) Write a recursive Python function that recursively computes sum of elements in a list of lists. Sample Input: [1, 5, [6,4]] Expected Result: 17. [7M]

(OR)

- 6 a) Write a Python function to check whether a number is perfect or not. [7M]
 b) Create a python program to display the bank account information using various methods. [7M]

UNIT-IV

- 7 a) Define Polymorphism and explain Polymorphism using an example Python program. [7M]
 b) Write a Python program to extract characters from various text files and puts them into a List. [7M]

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(OR)

- 8 a) When do we need a separate configuration file? Explain the steps for writing, reading and extracting values from config files in Python. [7M]
b) Define Inheritance and explain types of Inheritance with examples. [7M]

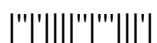
UNIT-V

- 9 a) List and explain the exception handling mechanism in Python? [7M]
b) What is tkinter in Python? Explain and Illustrate the usage of [7M]
i) Scrollable List Box ii) Menu iii) Progress bar

(OR)

- 10 a) Write a Python GUI program to illustrate the behavior of terminal based programs. [7M]
b) Explain the purpose of 'else' and 'finally' blocks in exception handling with a Python program. [7M]

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UNIT-I

- 1 a) Give a note on each of the below Python language constructs: [7M]
(i) quotes (single, double and triple) (ii) multiline statements (iii) indentation
- b) Write a python program to display the Fibonacci sequences up to nth term where n is provided by the user. [7M]

(OR)

- 2 a) Define the following with the necessary examples. [7M]
i. if statement ii. If-else-if statement iii. nested –if statement
- b) Write a Python program to convert height in feet and inches to cm. [1 feet = 12 inch and 1 inch= 2.54 cm] (Sample input: 2 feet 7 inch Sample output: 78.74 cm). [7M]

UNIT-II

- 3 a) List and Explain Python loop control Statements with examples and flow diagram. [7M]
- b) Create two sets of integers, and compute their intersection and union by using **&** and **|** operator expressions. [7M]

(OR)

- 4 a) Explain with an example, how + and * operators work with strings. [7M]
- b) What is mutable data type? Explain various string operations with suitable program. [7M]

UNIT-III

- 5 a) Explain the List Slicing and List Mutability. [7M]
- b) Write a Python program to swap the first and last characters of a given string. [7M]

(OR)

- 6 a) Explain in detail about dictionaries in Python. [7M]
- b) Write a Python program to read a word and print the number of letters, vowels and percentage of vowels in the word using a dictionary. [7M]

UNIT-IV

- 7 a) Explain about class and constructor and write a python program to create a class and display the output [7M]
- b) List and Explain built in function used in file operations with examples [7M]

(OR)

- 8 a) Explain briefly about inheritance and write python program to demonstrate inheritance. [7M]
- b) Explain with example overriding in Python? Write the code snippet. [7M]

UNIT-V

- 9 a) How to handle an exception using try except block? Explain with the program. [7M]
b) Write a program for basic web browser using Tkinter which should have a Text widget where the user can enter a URL and a Canvas to display the contents of the page [7M]

(OR)

- 10 a) Define error and exception. Distinguish between these two features. [7M]
b) Create a python program with various GUI features. And explain them in detail. [7M]

