JHARKHAND Rai University
RANCHI

PRACTICE SET

End Semester Examination December 2025

Program: B.Tech **Semester : V**
Subject: Introduction to Python Programming **Subject Code: 3TECCS301**

Course Outcome:
After the successful completion of the course, the students will be able to:
• Define and demonstrate the use of built-in data structures “lists” and “dictionary”.
• Design and implement a program to solve a real world problem.
• Design and implement GUI application and how to handle exceptions and files.
• Make database connectivity in python programming language.

Section A **(19x 5= 95)**

1) Indentation plays an important role in writing Python code. Justify your answer with a suitable example. [CO1, Unit-1, Understand, LOT]
2) What is Python? List the libraries available for Desktop Applications, Web Development, Machine Learning, Data Science, and Data Visualization. [CO1,Unit-1,Understand, LOT]
3) Describe the types of comments supported in Python. [CO1,Unit-1.Understand, LOT]
4) How you will define keyword? Name at least 10 keywords supported by Python. [CO1, Unit-1, Understand, LOT]
5) Explain Python variables with appropriate examples. [CO1, Unit-1, Understand, LOT]
6) What is the use of input () and print () method? Explain with a Python code snippet. [CO1, Unit-1, Understand, LOT]
7) How module can be described? What is the way of including module in the program? [COI, Unit-I, Understand, LOT]
8) Write a Python program using a while loop that repeatedly asks the user to enter a number and display it. If the user enters a negative number, the program should stop asking and print "Loop ended". Use a break statement in your program. [CO2, Unit-II, Apply, LOT]
9) Write a Python program that displays the greatest among three numbers entered by the user. Use an if-elif-else block to display the appropriate message. [CO2, Unit-II, Apply, LOT]

10) Define loop with its syntax. Write a Python program to print all the two digit numbers that are divisible by either 3 or 7. Use a for loop and the range() function .[CO2, Unit-II, Apply, LOT]
11) How String can be defined? Briefly explain its three functions. [CO2, Unit-III, Understand, LOT]
12) Explain List sequence along with its important functions. [CO2, Unit-III, Understand, LOT]
13) Write a Python function to implement pow (x, n). [CO2, Unit-III, Understand, LOT]
14) Explain the sort () and range () function in Python. [COI, Unit-III, Understand, LOT]
15) Differentiate between append () and insert () method of list. [COI, Unit-III, Analyze, LOT]
16) What is an exception? Name some built-in exception, [CO3, Unit-IV, Understand, LOT]
17) What are the different file access modes available in Python? [CO3, Unit-IV, Understand, LOT]
18) What is an error in Python? Explain the concept of errors in programming. [CO3, Unit-IV, Understand, LOT]
19) Explain the Tkinter package in Python and list some of its important widgets. [CO3, Unit-IV, Understand, LOT]

Section B **(13X10=130)**

20) Describe the different data types supported in Python. [CO1,Unit-1,Understand, LOT]
21) Write a Python program using a 'for' loop and the range () function to calculate and display the sum of all odd numbers between 3 and 33. Include comments explaining the role of the 'for' loop and the range() function. [CO2, Unit-II, Apply, LOT]
22) Discuss the differences and use cases of the following loop control statements in Python:
(i) break (ii) continue (iii) pass (iv) else clause in loops
[CO2, Unit-II, Understand, LOT]
23) Write a Python program to take a string input from the user and perform the following:
(i)Convert the string to uppercase. (ii)Count the number of vowels in the string. Use appropriate string methods to achieve this. [CO2, Unit-III, Apply, LOT]
24) Define a list of integers from 1 to 10. Write a Python program to extract the first five elements using list slicing and reverse the list using slicing. [CO2, Unit-III, Apply, LOT]
25) Explain the similarities and differences between lists and tuples in Python.
[COI, Unit-III, Analyse, HOT]
26) Describe lambda function. How does it is different from regular function? Explain with a proper example. [COI, Unit-III, Understand, LOT]

27) Create a dictionary with the names of three Employees as keys and their salary as values. Perform the following operations:
(a)Add a new employee and their salary to the dictionary.
(b)Update the salary of an existing employee.
(c) Display the dictionary after the updates [CO2, Unit-III, Understand, LOT]
28) How can you create your own exception in Python? [CO3, Unit-IV, Apply, LOT]

29) Design a GUI program in python which will display the average of three subject marks of any student. [CO3, Unit-IV, Apply, LOT]
30) Explain the prerequisites for connecting Python with a database. [CO4, Unit-IV, Apply, LOT]
31) What is the use of read (), write (), open () and close () function in file? [CO3, Unit-IV, Apply, LOT]
32) Write the function to send data from a GUI interface to a database (employeedb) which contain a table employee whose attribute are empname, salary and designation. The GUI interface contains the entry widgets namely e1, e2 and e3 for employee name, salary and designation respectively. [CO4, Unit-IV, Apply, LOT]

Section C **(6x 20=120)**

33) Develop a Python program to perform the following tasks:
(i) Declare variables of different data types: int, float, and str.
(ii) Assign appropriate values to these variables.
(iii) Perform the following operations:
(a) Add two integer variables and display the result.
(b) Multiply a float variable with an integer variable and display the result.
(c) Concatenate two string variables and display the result.
Demonstrate the use of at least two basic Python operators (e.g., +, , */, //).* [CO2, Unit-I, Create, HOT]
34) Design a Python program that iterates through numbers from 3 to 99 using a 'for' loop. Skip numbers divisible by 3 and 7 using the 'continue' statement. If a number is divisible by 95, use the 'break' statement to stop the loop. For all other numbers, use the 'pass' statement and print the number. Include comments explaining the role of 'break', 'continue', and 'pass' in your program.
[CO2, Unit-II, Create, HOT]
35) Design a Python program that performs the following operations on a user-defined string:
(i)Check if the string is a palindrome (reads the same backward as forward). (ii)Replace all vowels in the string with the character '#'.Use appropriate comment for increasing the readability of the program. [CO2, Unit-III, Create, HOT]
36) Write a Python program that takes two numbers as input from the user. Divides the first number by the second and handles the potential exception when dividing by zero. Display the result of the division if successful or an appropriate error message if an exception occurs. Uses finally block to display a message. [CO3, Unit-IV, Create, HOT]
37) Write a Python program using Tkinter to create a simple GUI application with the following features:
(i) A window titled *'Arithmetic Operation'*.
(ii) Two entry fields for user input of numbers.

(iii) A button that performs the addition of the two input numbers.
(iv) A label that displays the result of the addition when the button is clicked.
Explain how the GUI components (buttons, entry fields, and labels) interact in your program. Also, describe how Tkinter handles events (such as button clicks) to update the label with the result. [CO3, Unit-IV, Create, HOT]

38) Design a Python GUI application using Tkinter to send student information to a database. The database details are as follows:
Database Name: *studentdb*
Table Name: *student(rollno, name, marks)*
Assume that the database and its table have already been created. [CO4, Unit-IV, Create, HOT]

Summary Sheet:

CO Wise

CO	**Q. No**	**Marks**
CO1	1-7,20,33	65
CO2	8-11,21,22,34	60
CO3	12-19,23-30,35,36	160
CO4	31,32,37,38	60
Total		**345**

Unit Wise

Unit	**Q. No**	**Marks**
Unit 1	1-7,20,33	65
Unit 2	8-10,21,22,34	55
Unit 3	11-15,23-27,35	95
Unit 4	16-19,28-32,36-38	130
Total		**345**

Blooms Taxonomy Level (BTL) Wise

BTL	**Q. No**	**Marks**
LOT	1-32	225
HOT	33-38	120
Total		**345**

Prepared by:

Disclaimer: -This is a Practice Set. The Question in End term examination will differ from the Practice Set. This Practice Set is meant for practice only.