1641357

22PLC25B

VTU.REG.NO

B.E. Second Semester Examination – July 2024

Introduction to Python Programming

Time: 3 hrs] [Maximum Marks: 100

Note: Answer any FIVE full questions, selecting atleast ONE full question from each module.

Module – I

1. a) Discuss the steps of working with interactive shell of python with an example program. **(05 Marks)**
   b) Explain with illustrations the following inbuilt functions:
   i) print ii) input iii len iv) str v) int and float **(10 Marks)**
   c) What is a variable? Discuss rules for defining a variable name and show how variable assignment is done. **(05 Marks)**
2. a) Analyze the operation of different flow control statements in python with example programs. **(10 Marks)**
   b) Define a function. Give the syntax for function definition. Write a python program to show value return and non value return operations. **(06 Marks)**
   c) What is standard library in python? Show with an example accessing of functions from library. **(04 Marks)**

Module – II

3. a) What are lists? Write a python program to create a list. Perform the following operations on list
   i) Read value of [2] and del [3] ii) Replace value at index 4 with new value
   iii) Find the length of list
   iv) Concate two lists v) Read list contents and print using for loop
   vi) Slice contents of list **(12 Marks)**
   b) What are mutable and immutable data types? Define a tuple and discuss its datatype. Show with example, creation of a tuple. **(08 Marks)**
4. a) What is a dictionary and show creation of dictionary with an example. Also discuss the difference between dictionary and lists. **(10 Marks)**
   b) List and explain the dictionary methods with examples. **(10 Marks)**

Module – III

5. a) Define string literals and show with examples the following with string.
   i) Double quotes and triple quotes ii) Escape characters iii) Indexing and slicing strings iv) The 'ln' and 'not in' operators with strings. **(10 Marks)**
   b) Discuss the usefulness of string methods and explain the following methods with examples.
   i) Upper( ), isupper, lower( ), islower( ) ii) Starts with( ) and enswith( ) iii) Join( ) and split( ) iv) Text justification v) Removing white spaces **(10 Marks)**
6. a) What are the two key properties of file and discuss the following functions with examples:
   i) OS.path.join( ) ii) OS.get.cwd( ) iii) OS.chdir( ) **(12 Marks)**
   b) What are absolute and relative path? Show creation of folders with OS.makedirs( ). **(08 Marks)**

Module – IV

7. a) What is a shutil module? Discuss the role of this module in python programming and explain the following functions of the shutil module with examples:
   i) Copying files and folders ii) Moving and renaming files and folders. **(12 Marks)**
   b) Explain the working with zipfile module in python. **(08 Marks)**
8. Explain the following
   a) Raising exceptions in python **(08 Marks)**
   b) Assertions **(06 Marks)**
   c) Logging and levels of logging **(06 Marks)**

Module – V

9. a) Define a class, class objects and attributes of class with examples. (08 Marks)

b) Develop a program to design a class rectangle and show
i) Creating object and attributes. Draw the object diagram.
ii) With rectangle as an argument return the object containing co-ordinates of center of the rectangle. (12 Marks)

10. Analyze and explain the following method with example

a) The init method (example: create a time class with hour, minute and second as attributes) (07 Marks)

b) The – str – method. (07 Marks)

c) Operator overloading. (06 Marks)