Parvatibai Chowgule College of Arts & Science
(Autonomous)
B.Sc. Semester End Examination, January/February 2022

Semester : III
Subject : Skill Enhancement Course
Course Title : Python Programming
Duration : 2 Hours   **Max. Marks : 60**

Instructions to the candidates :
1. Q1 is compulsory. Q2 to Q5 has internal choice.
2. Figures to the right indicate marks assigned to the Question.

Q1. **Answer the following :**   **(3 * 4 = 12)**
   a) What are the various features of Python Programming?
   b) Write a recursive function and a main program in Python to calculate the sum of the series : 1+2+3+4+…+N.
   c) What is a list with mixed datatypes in Python? Explain by giving a suitable example.

Q2. Answer **ANY TWO** of the following :   **(2 * 6 = 12)**
   a) Differentiate the following in Python :
     1) continue and break statement.
     2) List and Tuple
   b) Write a program in Python to input a positive one digit number (1 to 9) and print it in words. User input must be validated.
     Test data : 4
     Expected output : Four
   c) Write a note on range( ) function in a for loop of Python. Using range(100,200), write a python program to make two strings, one containing all even numbers and the other containing all odd numbers in the given range.

Q3. Answer **ANY TWO** of the following :   **(2 * 6 = 12)**
   a) Write a note on the following in Python :
     1) Characteristics of a tuple
     2) any( ) function of a tuple by giving a suitable example.
   b) Write a note on any 3 string functions in Python by giving a suitable example.

c) An electricity department charges their consumer according to the units consumed per month according to the given tariff:

Units consumed	Charges
Upto 150 units	Rs.4/- per unit
>150 units and <=300 units	Rs.2.50/- per unit
>300 units	Rs.2/- per unit

In addition to the above, every consumer has to pay Rs.200/- as service charge per month. Write a program to input the amount of units consumed and calculate the total charges payable(bill) by the 'N' consumers.

Q4. Answer **ANY TWO** of the following : (**2 * 6 = 12**)
   a) Write a program in Python for the following :
      1) Create a dictionary whose keys are month names and whose values are the number of days in the corresponding months.
      2) Ask the user to enter a month name and use the dictionary to print the number of days of the given month.
   b) Write a user defined function and a main program in Python that takes two numbers and returns the number that has the minimum one's digit.
      Test data : 563
               167
      Expected output : 563
   c) Write a note on the following in Python :
      1) Binary file
      2) Describe the various file mode constants and their meanings

Q5. Assume that a file "Ranking.data" contains the following information :
A nested list with **COLLEGE-ID, COLLEGE-NAME, CITY-NAME, STATE-NAME, STAR-RATING**(1 TO 5)**, RANKING**(1 TO 200)**, and FUNDS-ALLOTTED**(in Lakhs).
Write a program in Python for **ANY THREE** of the following : (**3 * 4 = 12**)
   a) List the names of colleges whose allotted funds are more than the average funds-allotted to Colleges.
   b) List the names of Colleges whose star rating is 4 and ranking is below 50.
   c) Write the names of states from the file to a new list without duplicates.
   d) Find the total funds-allotted to a given state.

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