Examination – IV

*Answer any **five** questions*

[Full Marks: 5 x 20 = 100, Time: 3 hrs]

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1. Write a Python program to collapse a given number. *Collapsing* of a number is to repeatedly add the digits of the number and when it comes to a single digit sum then display it. For e.g. *Input Number = 1234, Output = 1* [since, 1+2+3+4 = 10, again, 1+0 = 1]

2. Write a Python program to find the *maximum* and *minimum* value from a user-given dictionary and then display the sum of the digits of their absolute difference.

3. Write a Python program to *match* key values in two dictionaries (which is to be taken from the user). If the keys are present, then form another dictionary where the values of the keys found will be the summation of their corresponding values from the other dictionaries. For e.g. *Input Dictionary1 = {1:1, 2:2, 3:3, 4:4}, Input Dictionary2 = {1:1, 3:9, 4:16, 5:25}, Output Dictionary = {1:2, 3:12, 4:20}.*

4. Write a Python program to find the list of words that are longer than *n* (integer to be taken from the user) from a given list of words (to be taken from the user). Concatenate the words altogether and then replace all the *consonants* with its next alphabet from the alphabetical series and finally display the modified string.

5. Write a Python program to take *two* lists (of strings) from the user. Find the longest word from both the lists and then finally display the *common vowels* present in them.

6. Write a Python program to check whether a list of integers (to be taken from the user) is *Increasing* or not. An *increasing list* is a list of integers where all the integers present is itself an *increasing number* and they are in ascending order in the list. An *increasing number* is a number in which all the digits are present in an increasing order (from left to right).

7. A *dictionary* of voters are given (to be taken from the user), where the *keys* are the names of the voters and their corresponding *values* are their email-ids. The email-ids are given in such a way that they contain the year of birth of the person under consideration, for e.g. *sahadipanjan1990@gmail.com*. Taking the base (or reference) year to be 1950, write a Python program to display the *names* of all persons from the given dictionary who are eligible to vote (eligibility criteria: age should be greater than 21 years).

8. Write a Python program to find the count of each *vowel* present in a string (to be taken from the user) and display them.