G05-36

VIT
Vellore Institute of Technology
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School of Information Technology and Engineering

Winter Semester 2022-2023 (Freshers)

Continuous Assessment Test – II

Programme Name & Branch: MCA

Course Name & code: Python Programming (ITA6017)

Class Numbers: VL2022230500538, VL2022230500489, VL2022230500251

Faculty Names: Nivedhitha M, Balasubramani M, Arun Kumar A

Exam Duration: 90 Min.   Maximum Marks: 50

General instruction(s): Read the questions carefully and answer.

Q.No.	Question	Max Marks
1.	Government of India has appointed two separate teams with three members each for investigating a case. After forming the two teams with three members each, as a cost-cutting measure, the government decides to merge the two teams in to a single team with five members, by eliminating the member with the least experience among all the six members from the two teams. Use dictionaries to store the two teams and form a new team by concatenating the two teams. The chairperson of the new team is the person with the maximum experience. Write a python code to store the members of the two teams as dictionaries, print the new (concatenated) dictionary with the names in an increasing order of experience, to check whether a given name is present in the new dictionary or not and to print the name of the chairperson of the new team. Note: Assume that there is only one person with least experience in the two dictionaries.	10
2.	pneumonoultramicroscopicsilicovolcanoconiosis' is the longest word in a dictionary with 45 characters. Given the value of 'i' and the value of 'k', write a Python code to output five letters which are in position that are the first five multiples of 2*i+k. If the multiple greater than the length of the string then continue the counting from the beginning of the string. For example, if the value of i = 5 and k = 2 then the letters are 'r', 'c', 'n', 'e', and 'i'. The longest string is stored in a variable named as 's' in the precode, used it for coding.	10
3.	John's mother will take him to the doctor's clinic for a check-up. She asks the time by which John has to book a taxi. His	10

	mother has some works: going to the dry-cleaners in the mall, have lunch in the restaurant, buy some dog food at the pet-shop, take money in the bank, to be done on the way, It takes 'x' minutes to drive to the mall and park the vehicle, and 'y' minutes to get the clothes dry cleaned, 'z' minutes for lunch, 'a' minutes to get dog food, 'b' minutes to get money at the bank and 'c' minutes to drive to the doctor's office from the mall. Given the values for 'x', 'y', 'z', 'a' and 'b' and the time of appointment as 'h' hour 'm' minutes, write a Python code to determine when John should leave home. For example if x is 20, y is 10, z is 45, a is 10, b is 10, c is 20 and h is 14 and m is 0, then John has to start from home by 12 hour 05 minutes (assuming it as the current time). Write appropriate functions for accomplishing the task.	
4.	Write a python code for interactive calculator along with a flowchart. User input is assumed to be a formula that consist of a number, an operator (at least + and -), and another number, separated by white space (e.g. 1 + 1). Split user input using str.split(), and check whether the resulting list is valid: • If the input does not consist of 3 elements, raise a FormulaError, which is a custom Exception. • Try to convert the first and third input to a float (like so: float_value = float(str_value)). Catch any ValueError that occurs, and instead raise a FormulaError • If the second input is not '+' or '-', again raise a FormulaError If the input is valid, perform the calculation and print out the result. The user is then prompted to provide new input, and so on, until the user enters quit	10
5.	a) Write a REGEX to validate the pin code of India Test Cases: 1. It can be only six digits. 2. It should not start with zero. 3. First digit of the pin code must be from 1 to 9. 4. Next five digits of the pin code may range from 0 to 9. 5. It should allow only one white space, but after three digits, although this is optional. b) Write a REGEX to validate Identifier Test Cases: 1. It must start with either lower case alphabet[a-z] or upper case alphabet[A-Z] or underscore(_). 2. It should be a single word, the white spaces are not allowed. 3. It should not start with digits.	5+5