

Instructions to the Students:

1. All the questions are compulsory.
2. The level of question/expected answer as per OBE or the Course Outcome (CO) on which the question is based is mentioned in () in front of the question.
3. Use of non-programmable scientific calculators is allowed.
4. Assume suitable data wherever necessary and mention it clearly.

(Level/CO) Marks

Q. 1 Solve the following.

A) Explain the following

- A. Skills necessary for a programmer
- B. Interactive mode
- C. Short circuit evaluation of expression

(1/1) 6

B) Write a Python Program to check if a number is a prime number

(2/1) 6

Q.2 Solve Any Two of the following.

- A) List the rule to declare a variable in python. Demonstrate at least three different types of variable uses with an example program.
- B) Write a python program to find the best of two average marks out of three test's marks accepted from the user.
- C) How python handle the exceptions? Explain with an example program

(3/1) 6

(2/2) 6

(2/2) 6

Q. 3 Solve Any Two of the following.

- A) How to declare the call functions in python programs? Illustrate with an example script.
- B) List and explain few most commonly used built in types in python.
- C) Summarize various operators, built in functions and standard library modules that deals with Python's numeric types.

(2/3) 6

(1/3) 6

(2/2) 6

Q.4 Solve Any Two of the following.

- A) Given a list L, write a program to shift all zeroes in list L towards the right by maintaining the order of the list. Also print the new list.

(3/3) 6

Input:

[0,1,0,3,12]

Output:

[1,3,12,0,0]

- B) Given a string S, write a function replace V that accepts a string and replace the occurrences of 3 consecutive vowels with _ in that string.

(2/3) 6

Make sure to return the answer string.

- C) Given an integer n, print all the indexes of numbers in that integer from left to right.

(1/3) 6

Input:

122345

Output:

1 0

2 1 2

3 3

4 4

5 5

Q. 5 Solve Any two of the following.

- A) What are lists? lists are mutable. Justify statement with examples (2/4) 6
- B) How tuples are created in Python? Explain different ways of accessing and creating them (3/4) 6
- C) Ram shifted to a new place recently. There are multiple schools near his locality. (2/4) 6

Given the co-ordinates of Ram P(X,Y) and schools near his locality in a nested list, find the closest school. Print multiple coordinates in respective order if there exists multiple schools closest to him. Write a function closest School that accepts (X ,Y , L) where X and Y are co-ordinates of Ram's house and L contains co-ordinates of different school.

Distance Formula(To calculate distance between two co-ordinates): $\sqrt{((X2 - X1)^2 + (Y2 - Y1)^2)}$

where (x1,y1) is the co-ordinate of point 1 and (x2, y2) is the co-ordinate of point

2.

Input:

X, Y (Ram's house co-ordinates)

N (No of schools)

X1 Y1

X2 Y2

X6 Y6

Output:

Closest point/points to X, Y

import math

*** End ***