**Progressive Education Society's**
**Modern College of Arts, Science & Commerce Ganeshkhind, Pune – 16**
**(Autonomous)**
**End Semester Examination: MAR / APR 2025**
**Faculty: Science and Technology**

**Program: B.Sc (Gen. 03)**    **Semester: VI**    **SET: A**
**Program (Specific): General B.Sc**    **Course Type: DSC**
**Class: T.Y.B.Sc**    **Max.Marks: 35**
**Name of the Course:  Scientific Data Analysis Using Python**
**Course Code: 24-PHY-3610**    **Time: 2Hr**
**Paper: X**

**Instructions to the candidate:**

1) *All questions are compulsory.*
2) *Figures to the right indicate full marks.*
3) *Draw a well labelled diagram wherever necessary.*
4) *Use of Scientific calculator and log table is allowed.*

**Q1)  Multiple Choice Questions.**                                          **5**

i)    Commands given to the computer that tell, what it has to be done are called ----.

   a)  Data           b) information          c)  knowledge           d) instructions

ii)    Which of the following errors is generated when rules of a programming language are violated…..

   a)Syntax error          b) Semantic error          c)  Linker error          d) Logical error

iii)     Which operator gives the remainder after division

   a)  /               b)  //               c)  %               d)  *

iv)    Which statement ends the current iteration of the loop and continues with the next one …..

   a)  break          b)  Continue     c)  skip          d) None of these

v)    Statement  print ((0,10,20) < (0,30,40)) will give output

   a)  True               b) false          c)  equal          d) error

**Q2) Answer the following. (Attempt any 4)**                                          **4**

i)    Write the meaning of following instruction.
      import pandas as pd
ii)    What is use of  append ( ) function in python?
iii)    State the number from which the index value start.
iv)    What is use of  randrange ( ) function from random module?
v)    Which function is used to display the last five records of the dataset?
vi)    From list and tuple which is faster.

**Q3) Answer the following. (Attempt any 4)**      **8**

   i)     Write any two properties of Dictionary.

   ii)    Write the output of following program.

                from math import sqrt

                print sqrt(81)

   iii)   State the names of the input and output devices used in computer.

   iv)   Write any two differentiating point between del ( ) and pop ( ).

   v)    Write the output of the program

          str = 'python is easy'
          print (str [3] )
          print (str [ :8] )

   vi)   What is the difference between list and dictionary?

**Q4) Answer the following. (Attempt any 2)**      **8**

   i)     Explain with suitable example how the dictionary values are access.

   ii)    Explain Math module using any three mathematical functions in python program.

   iii)   Write any four features of Numpy library.

   iv)   Using iris data write a python program to draw scatter plot

**Q5) Answer the following. ( Attempt any 2)**      **10**

   i)     Using proper data on x and y axes write a program to draw bar plot.

   ii)    Write a python program to create Dataframe using pandas library.

   iii)   Write the basic syntax of scatter and pie plot.

   iv)   Write a python program to delete rows and columns from dataframe.

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