JSB-4035

B.C.A. (IVth Semester) Examination, June-2025

PYTHON

Paper – BCA 5 DCCT-42

Time : 3 Hours]   श्री जैन (पी ...) ..., नेावने s   [Maximum Marks : 80

Section–A   (Marks : 1 × 10 = 10)

Note :–   Answer all *ten* questions. Questions (i) to (v) are multiple-choice questions, while questions (vi) to (x) are fill in the blank questions. Each question carries **1** mark.

Section–B   (Marks : 5 × 5 = 25)

Note :–   Answer all *five* questions. Each question has internal choice (Answer limit **150** words). Each question carries **5** marks.

Section–C   (Marks : 15 × 3 = 45)

Note :–   Answer any *three* questions out of five (Answer limit **400** words). Each question carries **15** marks.

Section–A

1.   (i)   What is the output of :

      print (type(5))

      (a)   <class 'float'>

      (b)   <class 'int'>

      (c)   <class 'str'>

      (d)   <class 'list'>

(ii) What is the output of :

print ("Hello" * 3)

(a) Hello 3

(b) Hello Hello Hello

(c) Error

(d) 3 Hello

(iii) Which of the following is correct way to create a list in Python ?

(a) {1, 2, 3}

(b) (1, 2, 3)

(c) [1, 2, 3]

(d) <1, 2, 3>

(iv) What will the following code output ?

import pandas as pd

data = {'Name' : ['A', 'B', 'C'], 'Age' : [21, 22, 23]}

df = pd.Data Frame (data)

print (df.shape)

(a) (3, 2)

(b) (2, 3)

(c) (3, 3)

(d) (2, 2)

(v) In Python, the code inside the except block runs when :

(a) The program runs without errors

(b) The program finishes successfully

(c) We close Python

(d) An error happens inside the try block

(vi) In Python, we use the keyword .... to define a function.

(vii) A collection of items in a specific order, written inside square bracket [ ], is called a ....

(viii) The library .... is commonly used in Python for numerical computations and arrays.

(ix) In Pandas, a .... is like a table with rows and columns.

(x) The function plt. .... ( ) is used to display the plot window, using Matplotlib.

Section-B

Unit-I

2. Explain any *two* standard Scalar data types in Python.

Or

Using one example, explain how do you use 'range' function.

Unit-II

3. How can you add a new key-value pair to an existing dictionary in Python ?

Or

Why do we use functions in Python ? Give one suitable example.

Unit-III

4. Give an example of a Python object and call one of its methods. You may use few lines of code to explain the concept.

Or

Write a Python program using Numpy to create an ID array of numbers from 1 to 10 and print only the even numbers.

Unit-IV

5. Write a Python program to create a Pandas Dataframe with two columns : Name and Age. Add three rows of data and print only the rows where age is greater than 20.

Or

Write a Python program using Pandas to read a CSV file named students. CSV and display only the first rows.

Unit–V

6. Explain how do you plot a line graph of numbers 1 to 5 on the x-axis and their squares on y-axis.

Or

Explain how do you open a text file in read mode and print its contents.

Section–C

7. Write a program in Python to check entered number by user is prime or not.

8. Explain the concept of dictionary with related operations, using suitable examples.

9. Explain the concept of Psuedocode number generation in Python using suitable example.

10. Explain any *five* functions related to dataframes in Pandas.

11. Write short notes on each of following :

 (a) SciPy

 (b) Networkx

 (c) Scikit-learn

 (d) Scatter plot

 (e) Histogram