Programming in Python

Unit I Part A (2 Marks)

- 1.List four string functions in python.
- 2. Explain with example the use of single, double, triple quotes in python.
- 3. Write the equivalent python expression.

$$\sqrt{r(\cos a)^2 + r(\sin a)^2}$$

4. What are the key features of python?

- 5. Write python code to read a string and print it in reverse.
- 6. What are the built-in types available in python?
- 7. Write a two difference between a list and a tuple.
- 8. Write one line code to print number from 6 to 25 in base 8, and base 16.
- 9. How to convert a list into other data types.
- 10. List any five data types in python.
- 11. Find the output: a,b,c,d=25,0x25,0o25,0b1101; print(a,b,c,d).
- 12. Find the output: x=100; print("{:8b}{:8d}{:8x}{:8o}{:e}".format(x,x,x,x,x))
- 13. What are keywords? Give Example.
- 14. What is return statement?
- 15. Outline the logic to swap the contents of two identifiers without using third variable.

Unit I Part B (5 Marks)

1.State about logical operator available in python with example.

- 2.Illustrate interpreter and interactive mode in python.
- 3.Define module in python. Give an example to use it.
- 4. Show the usage of five format specifiers in python.
- 5. Define local, global and lexical scope in python. Give example.
- 6. What is the role of following characters in python (i) | (ii) $(iii) \& (iv) // (v) \% (iv) \sim$
- 7. Write a python program to reverse each word of a given string.
- 8. Define mutable and immutable with example.
- 9. Write a python program to check a given year is leap year or not.
- 10. How function is defined in python. Write a function to check a number is prime.
- 11. Write python program to find sum of digits of a number.
- 12. Write python code to convert a given number to binary, octal, hexadecimal equivalent.
- 13. Demonstrate the various expression in python with examples.
- 14. Give the characteristics of membership operator with suitable example.

Unit I Part C (10 Marks)

1. Explain in detail about the various operators in python. List their hierarchy.

- 2.Illustrate a program to display different data types using variables and literal consonants.
- 3.Describe the classification of function in python. Give an example for each with suitable program.
- 4.Discuss in detail about function prototyping in python with example.
- 5. Enlist the various features in python programming language.
- 6.Explain different ways of importing module in python.

7. Write a function in python to count vowels and words in a given text.

Unit II Part A (2 Marks)

- 1. What is the purpose of pass statement.
- 2.write the syntax of if and if-else statement.
- 3. What is chained conditional statement?
- 4. Write the syntax and usage of for loop.
- 5. What is len function and explain?
- 6.Define Recursion with an example.
- 7.Compare return value and composition.
- 8. How fruitful function is defined in python.

9. Write a python program to check a given number is Armstrong number.

10. Write a python program to compute LCM and GCD of given number.

11. What will be the output of print str[2:5] if str='hello world!'?

12. Give the use of return () statement with a suitable example.

13.Illustrate the flow chart of if-elif- else statements

Unit II Part B (5 Marks)

1.Write a python code to provide bonus mark if the category is sports.

2. What is chained conditionals? Write a python code for student mark system.

3. Write a python program to accept two numbers, find the greatest and print the result.

4. Find the Square root of a number using newtons method.

5. Write a python program to set traffic light system.

6.Write a python program to find reverse the given number using while loop.

7. Write a python program to check a string is palindrome or not.

8. Write a program to iterate a range using continue statement.

9.Explain about break statement with an example.

10.Explain the significance of for loop with else in an example.

11.Classify global variable with local variable.

12. What is the use of pass statement, illustrate with an example.

13.Write a python program to find the given number is odd or even

14. Write a python program to count the number of vowels in a string provided by the user.

15.Create a python program to find the given year is leap or not

Unit II Part C (10 Marks)

1.Discuss conditional alternate and chained conditional in details.

2.Discuss various control statements in python with example.

3.Write python code to print odd numbers upto 100 using (i)do (ii)while (iii)for (iv)range (v)List comprehension (vi)using function.

4. Write a python program to print first 100 prime numbers.

5.Explain break and continue statement with the help of for loop in an example.

6.Illustrate syntax and flowchart of the following loop statements in python.

(i)for loop (ii)While loop.

Unit III Part A (2 Marks)

1.What are tuples in python?

2.Explian how to create a dictionary in python?

- 3. What is range() function and how it is used in list?
- 4. How list are updated in python?

5.Write a few methods that are used in python lists.

6. What are advantages of tuple over list?

7. How indexing and negative indexing done in tuple?

8.Find the output: print tuple + tinytuple if tuple=('abcd',786,2.23,'John',70.2) and tinytuple=(123,'John').

- 9. What is meant by key-value pairs in a dictionary?
- 10. How does del operation work on dictionaries? Give an example.
- 11.Define Python list.
- 12.Describe list slicing with examples.
- 13.Show the membership operators used in list.
- 14.Point out the methods used in tuples.

Unit III Part B (2 Marks)

1.Differentiate between tuples and dictionaries.

- 2. What is python List ?Describe the List usage with suitable examples.
- 3. Write a python program to illustrate the heterogeneous list.

4. Explain the basic List Operations indetails with necessary programs

5.Write a python program to concatenate two lists

6. What is a Python Tuple? What are the Advantages of tuple over List?

7. Tuples are immutable. Explain with Examples.

8. What are the accessing elements in a tuple? Explain With suitable Programs.

9.Explain the properties of Dictionary keys with examples

10.Why it is necessary to have both the functionsappend and Extend? What is the result of the following expression that uses. Append where itprobably intended to use extend? >>>lst = [1, 2, 3]>>>lst.append([4, 5, 6])

Unit III Part C (10 Marks)

- 1.Discuss he difference between tuples and list
- 2.Discuss the various operation that can be performed on a tuple and Lists (minimum 5) with an example program.
- 3.Demonstrate the various expressions in python with suitable examples.
- 4. What are basic list operations that can be performed in python? Explain each operation with its syntax and example.
- 5.Describe python dictionaries explain its operations and methods.
- 6.Describe the following
- a) Creating the List
- b) Accessing values in the Lists
- c) Updating the Lists
- d) Deleting the list Elements

Unit IV Part A (2 Marks)

1.List out different modes of file opening.

- 2.Define the access modes
- 3.Distinguish between files and modules
- 4.Define read and write file.
- 5.Discover the format operator available in files.
- 6.Explain built in exceptions

7. Write a program towrite a data in a file for both write and append modes.

8.Identify what are the packages in python

9.Express about namespace and scoping.

10.Difference between built in exceptions and handling exception

11.What is buffering?

12.Write about built – in class attribute.

13.List out format operator in python.

Unit IV Part B (5 Marks)

1. Write a Python program to demonstrate the file I/O operations

2.Discuss with suitable examples i) Close a File. ii) Writing to a File.

- 3. Write a program to catch a Divide by zero exception. Add a finally block too
- 4.Describe in detail about Exception with Arguments
- 5.Explain with example of closing a file
- 6.Discover syntax for reading from a file
- 7.Explain about the Files Related Methods.
- 8. Write a program to find the one's complement of binary number using file.
- 9.Describe in detail exception handling with sample program

10. Write a program to find the one's complement of binary number using file.

Unit IV Part C (10 Marks)

1.Generalize a case study on the getting the students mark statements and analysis with exception handling.

- 2. Write a program to find n number from list using file handling.
- 3.Measure to read random numbers upto 75 and display even and odd numbers with two different files.
- 4. Analyze the university result of various colleges in department wise using read and write file.
- 5. Explain in detail about file operations in python with example.
- 6. (a)Write a program for one file content copy into another file.(b)Find the most frequent words in a text read from a file.

Unit V part A(2 Marks)

- 1. Mention the different types of Data Structures in Pandas?
- 2.Define the Pandas/Python pandas?
- 3.What is Series in Pandas
- 4. What are the significant features of the pandas Library?
- 5. Give the features of Numpy.
- 6. What is meant Matplotlib? Give features of Matplotlib.
- 7. List any four data science tools
- 8. Predict the features of Scikit.
- 9. Compare Statistics and Data Science.
- 10. Point out the components of Data Science.
- 11. Compare various data science languages.
- 12. List out the components of Data Science.
- 13. Identify the tools for Data Science.
- 14. What are the different visualization tools?
- 15.Mention the different types of data structures in Pandas.
- 16. What is Pandas Numpy array?

Unit V part B(5 Marks)

- 1. Describe Numpy in detail.
- 2. Write a python program that uses numpy and explain it.
- 3. Describe the following. i. Numpy. (7) ii. Scikit.
- 4. Discuss various Toolkits in Python in detail.
- 5. Explain in python libraries for Data Science.
- 6. Compare between Loading, Cleaning and Exploring and Visualization.
- 7. Write a python program to add a column to a pandas DataFrame?
- 8. Convert DataFrame into an excel file?

Unit V part C(10 Marks)

- 1. Illustrate Matplotlib with an example.
- 2. Explain different visualization tools in detail with an example.
- 3. Write a program by loading the Iris dataset, split it into train and test sets, and compute the accuracy score of a pipeline on the test data.
- 4. Describe in detail about different ways to create Pandas dataframe in python.
- 5. Explain Series In Pandas with example.
- 6. Explain the following. (i)Create a Series using Dict in Pandas.(ii) Creating a DataFrame using dict of arrays.