GE3151 PROBLEM SOLVEING AND PYTHON PROGRAMMING

IMPORTANT QUESTIONS AND QUESTION BANK

UNIT-I COMPUTATIONAL THINKING AND PROBLEM SOLVEING

2-Marks

1. Point out any five Programming language?
2. Define Algorithm?
3. Distinguish between pseudocode and flowchart?
4. Define control flow statement with an example?
5. Describe Recursion?
6. Discover the concept of towers of Hanoi?
7. Explain list?
8. Define simple computational problems?
9. Define programming languages?
10. Describe some example for recursion function?

13-Marks

1. Explain the algorithm of GCD and find LCM?
2. Discuss with suitable examples; (i) find minimum in a list (ii) find maximum in a list?
3. (i) Summarize the advantages and disadvantages of flowchart. (ii) Summarize the symbol used in flowchart.
4. Describe the algorithm of the following (i) prime number or not (ii) odd or even.
5. Explain the rules for pseudocode and uses of keywords?
6. Explain in programming language; (i) Machine language (ii) Assembly language (iii) High level language.
7. With neat sketch explain the following building blocks of algorithm (i) statements (ii) control flow
8. Describe the algorithm of towers of Hanoi problem. Suggest a solution to the tower of Hanoi problem with relevant diagram?
9. Draw a flow chart to accept three distinct numbers find the greatest and print the results?
10. (i) Describe the pseudocode for Fibonacci sequence. (ii) Draw a flowchart for factorial of given number?
11. Describe the program to insert an element in a sorted list?
12. Draw the flowchart to find a sum of series 1+2+3+4+……+100.
13. Summarize the difference between algorithm, flowchart, and pseudocode?
14. Explain algorithm problem solving technique in detail?

15. Explain program development life cycle?

UNIT-II DATA TYPES EXPRESSIONS STATEMENTS

2-Marks

1. Define the two modes in python?
2. Give the various data types in python?
3. Asses a program to assign and access variables?
4. Compose the importance of indentation in python?
5. Demonstrate the various operations in python?
6. Discover the difference between logical and bitwise operator?
7. Demonstrate the various operations in python?
8. Define recursive function?
9. Generalize the uses of python module?
10. Give the syntax for variable length arguments?

13-Marks

1. Illustrate a program to display different data types using variables and literals constants?
2. Show how an input and output function is performed in python with an example?
3. Explain in details about the various operators in python with suitable example?
4. Discuss the difference between tuples and list?
5. Discuss the various operation that can be performed on a tuple and lists with an example program?
6. (i) What is a numeric literal? Give examples (ii) Describe the arithmetic operators in python with an example?
7. Demonstrate the various expressions in python with suitable examples.
8. What is membership and identity operators. Write a program to print the digit at ones.
9. Write a program to perform addition, subtraction, multiplication, integer division, floor division and module division and float?
10. Formulate the difference between type casting and type coercion with suitable examples?
11. Discuss the importance need function in python and illustrate a program to exchange the value of two variables with temporary variables?
12. Briefly discuss in detail about function prototyping in python with suitable example program?
13. Explain the operator precedence of arithmetic operators in python?

14. Write a program in python to exchange the value of two variables?
15. Write a python program using function to find the sum of first 'n' even numbers and print the results?

UNIT-III CONTROL FLOW FUNCTION STRINGS

2-Marks

1.Analysis different ways to manipulate strings in python?

2. Write the syntax if and if-else statements?

3. List our application of arrays?

4. Name the type of Boolean operators?

5.Explain about break statement with an example?

6. Where does indexing starts in python?

7.Define array with an example?

8. Differentiate for loop and while loop?

9. Justify the effects of slicing operation on an array?

10.How to access the elements of an array using index?

13-Marks

1. Write a python program in find a sum of N natural numbers?
2. What is the use of pass statements? Illustrate with an example?
3. Define methods in a string with an example program using methods?
4. Write a program for binary search using arrays?
5. What is call by value and call by reference and explain it with suitable examples?
6. Write a python program to find the given numbers is odd or even?
7. Explain with an example – While loop, break statements, and continue statement in python?
8. Write a python program to find count a number of vowels in a string provided by the user?
9. Explain the types of function arguments in python?
10. Explain the syntax flowchart of the following loop statements (i) for loop (ii) for while loop?
11. Explain recursive function? How do recursive function work?
12. Explain the significance of Xrange() function in for loop with a help of a program?
13. Explain the different type of function prototype with an example?

14. Create program to find the factorial of given number without recursion and with recursion?
15. Illustrate the concept of local and global variables?

UNIT-IV LISTS TUPLES DICTIONARIES

2-marks

1. Define python list. How lists differ from tuples?
2. What are the list operations?
3. What are the different ways to create a list?
4. Show the membership operators used in list?
5. How to slice a list in python?
6. Define python tuple?
7. What are the advantages of tuple over the list?
8. Point out the methods used in tuples?
9. Define dictionary with an example?
10. Perform the bubble sort on the elements 23,78,45,8,32,56.

13-Marks

1. What is the python list? Describe the list usage with suitable examples?
2. Write a program to illustrate the heterogeneous list?
3. Describe the following (i) creating list (ii) accessing values in the list (iii) updating the list (iv) deleting the list elements.
4. Explain the basic list operations in details with necessary programs?
5. Write a python program to multiply two matrices?
6. (i) Discuss by python list methods with examples (ii) Why necessary to have both the function append and extend?
7. Illustrate list comprehension with suitable examples?
8. Write a python program to concentrate two list?
9. What is python tuple? What are the advantages of tuples over the list?
10. Explain the properties of dictionary keys with examples?
11. Explain the operation of dynamically manipulating dictionaries?
12. Illustrate the ways creating the tuple and the tuple assignment with suitable programs?
13. What are the accessing elements in a tuple? Explain with suitable programs?
14. Explain the basic tuple operation with examples?
15. Write a python program named weather that is passed a dictionary of daily temperatures and returns the average temperature over the weekend for the weekly temperatures given?

UNIT-V FILES,MODULES,PACKAGES

2-Marks

1. Point out different modes of file opening?
2. Define the access modes?
3. Distinguish between files and modules?
4. Define read and write file?
5. Describe renaming and delete?
6. Discover the format operator available?
7. Explain with example the need for exceptions?
8. Explain built-in exceptions?
9. How to import statements?
10. Identify what are packages in python?

13-Marks

1. Write a python program to demonstrate the file I/O operations?
2. Discuss the different modes for opening a file and closing a fie?
3. Write a program to catch a divide by zero exception. Add a finally block too?
4. Write a function to print the hash of any given file in python?
5. (i) Explain with example of writing a file. (ii) Discover syntax for reading from a file?
6. (i) Structure renaming a file (ii) Explain about the files related methods?
7. (i) Describe the import statements? (ii) Describe the from…. import statements?
8. Describe in detail locating modules?
9. Identify the various methods used to delete the elements from the dictionary?
10. Describe in details exception handling with sample program?
11. Write a program to find the one complement of binary number using file?
12. Write a program to display a pyramid?
13. Write a program to find the number of instances of different digits in a given number?
14. Describe in details printing to the screen?
15. Describe the use of try block and except block in python with syntax?