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Question Paper Code : 91254

B.E./B.Tech. DEGREE EXAMINATIONS, APRIL/MAY 2025.

First Semester

Civil Engineering

GE 3151 – PROBLEM SOLVING AND PYTHON PROGRAMMING

(Common to : All Branches (Except Computer Science and Engineering
(Data Science)))

(Regulations 2021)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — ($10 \times 2 = 20$ marks)

1. List the building blocks of algorithm.
2. Write the characteristics of pseudocode.
3. Write a snippet to display “Hello World” in python interpreter.
4. Give the difference between intermediate mode and script mode.
5. Define string immutability.
6. Do loop statements have else clauses? When will it be executed?
7. Let list = ['a', 'b', 'c', 'd', 'e', 'f']. Find
 - (a) list[1:3]
 - (b) list[:4]
 - (c) list [3:]
8. Define Dictionary methods with an example.
9. Generalize the uses of python module.
10. List few common Exception types and when they occur.

PART B — (5 × 16 = 80 marks)

11. (a) Write the algorithm, pseudocode and draw the flowchart for the following:
- (i) Find minimum in a list
 - (ii) Insert a card in a list of sorted cards
 - (iii) Guess an integer number in a range
 - (iv) Towers of Hanoi

Or

- (b) (i) Explain simple strategies for developing an algorithm. (8)
- (ii) Write the recursive and iterative algorithm for inserting a Card in a list of sorted cards. (8)

12. (a) (i) Explain the data types in python. Illustrate with suitable example. (8)
- (ii) Write short notes on types of operators in python with appropriate example. (8)

Or

- (b) (i) Discuss the difference between tuples and list. (4)
- (ii) Discuss the various operation that can be performed on a tuple and Lists with an example program. (12)

13. (a) (i) Write a python program to count the number of vowels in a string provided by the user. (6)
- (ii) Explain the types of function arguments in python. (6)
- (iii) Create a python program to find the given year is leap or not. (4)

Or

- (b) (i) Explain the different types of the function prototype with an example. (8)
- (ii) Examine the program on Fibonacci series. (4)
- (iii) Illustrate the concept of local and global variables. (4)

14. (a) Describe the following with suitable example.

- (i) Creating the List
- (ii) Accessing values in the Lists
- (iii) Updating the Lists
- (iv) Deleting the list Elements

Or

(b) (i) Explain the basic Tuple Operations with examples. (8)

(ii) Write a program to check whether an element "y" and "a" belongs to the tuple My_tuple = (,p, y , t, h, o, n) and after Printing the result, delete the tuple. (8)

15. (a) (i) Explain python file handling. (8)

(ii) Describe in detail locating modules. (8)

Or

(b) (i) Describe in detail about Exception with Arguments. (8)

(ii) Describe in detail about user-defined Exceptions. (8)

