Question Paper Code : 51224

B.E./B.Tech. DEGREE EXAMINATIONS, APRIL/MAY 2024.

First Semester

Civil Engineering

GE 3151 – PROBLEM SOLVING AND PYTHON PROGRAMMING

(Common to all Branches)

(Also Common to PTGE 3151 – Problem Solving and Python Programming for
B.E. (Part-Time) First Semester – All Branches – Regulations – 2023)

(Regulations 2021)

Time : Three hours   Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1.   Differentiate Algorithm and Pseudo code.

2.   Write any two disadvantages of flowchart?

3.   What is the difference between interactive mode and script mode?

4.   Mention the features of lists in python.

5.   What is 'len' function? Give example for how it is used on strings.

6.   How to split strings and what function is used to perform that operation?

7.   What is range( ) function and how it is used in lists?

8.   What are the advantages of 'Tuple' over 'List'?

9.   What is module and package in Python?

10. List few common exception types.

PART B — (5 × 16 = 80 marks)

11. (a) (i)   Explain the steps involved in program development cycle.   (8)

          (ii) Write the algorithm, pseudocode and draw the flowchart for the
                following :

                (1) Guess an integer number in a range.   (4)

                (2) Towers of Hanoi.   (4)

Or

(b) (i) Explain the design structures in pseudo code. (8)

(ii) Write the algorithm, pseudocode and draw the flowchart for the following :

(1) To find the sum of square root of any three numbers. (4)

(2) To find the sum of first 100 integers. (4)

12. (a) Write the following python programs

(i) Test whether a given year is leap year or not (8)

(ii) To convert Celsius to Fahrenheit. (8)

Or

(b) Write the following python programs

(i) To find whether a given number is Armstrong number or not (8)

(ii) To print Fibonacci series. (8)

13. (a) (i) Explain call by value and call by reference in python. (8)

(ii) How to perform a user input in Python? Explain with example. (8)

Or

(b) (i) Briefly explain about function prototypes. (8)

(ii) Write a program to check whether entered string is palindrome or not. (8)

14. (a) What are the basic list operations that can be performed in Python? Explain each operation with its syntax and example. (16)

Or

(b) What is Dictionary? Explain Python dictionaries in detail discussing its operations and methods. (16)

15. (a) (i) Write a program to enter a number in Python and print its octal and hexadecimal equivalent. (8)

(ii) Explain in detail about namespaces and scoping. (8)

Or

(b) Explain in detail about Python Files, its types, functions and operations that can be performed on files with examples. (16)

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