Question Paper Code : 54009

B.E./B.Tech. DEGREE EXAMINATION, JANUARY 2018
First Semester
Civil Engineering
GE 8151 – PROBLEM SOLVING AND PYTHON PROGRAMMING
(Common to All Branches)
(Regulations 2017)

Time : Three Hours

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Maximum : 100 Marks

Answer ALL questions.

PART – A   (10×2=20 Marks)

1. What is an algorithm ?

2. Write an algorithm to accept two numbers, compute the sum and print the result.

3. Name the four types of scalar objects Python has.

4. What is a tuple ? How literals of type tuple are written ? Give example.

5. Write a Python program to accept two numbers, multiply them and print the result.

6. Write a Python program to accept two numbers, find the greatest and print the result.

7. What is a list ? How lists differ from tuples ?

8. How to slice a list in Python ?

9. Write a Python script to display the current date and time.

10. Write a note on modular design.

PART – B   (5×16=80 Marks)

11. a) i) Draw a flow chart to accept three distinct numbers, find the greatest and print the result.   (8)

    ii) Draw a flow chart to find the sum of the series $1 + 2 + 3 + 4 + 5 + \ldots\ldots + 100$.   (8)

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b) Outline the Towers of Hanoi problem. Suggest a solution to the Towers of Hanoi problem with relevant diagrams.   (16)

12. a) i) What is a numeric literal ? Give examples. **(4)**

    ii) Appraise the arithmetic operators in Python with an example. **(12)**

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  b) i) Outline the operator precedence of arithmetic operators in Python. **(6)**

    ii) Write a Python program to exchange the value of two variables. **(4)**

    iii) Write a Python program using function to find the sum of first 'n' even numbers and print the result. **(6)**

13. a) i) Appraise with an example nested if and elif header in Python. **(6)**

    ii) Explain with an example while loop, break statement and continue statement in Python. **(10)**

(OR)

  b) i) Write a Python program to find the factorial of a given number without recursion and with recursion. **(8)**

    ii) Write a Python program to generate first 'N' Fibonacci numbers. **(8)**

    Note : The Fibonacci numbers are 0, 1, 1, 2, 3, 5, 8, 13, 21, 34, ... where each number is the sum of the preceding two.

14. a) i) What is a dictionary in Python ? Give example. **(4)**

    ii) Appraise the operations for dynamically manipulating dictionaries. **(12)**

(OR)

  b) i) Write a Python program to perform linear search on a list. **(8)**

    ii) Write a Python program to store 'n' numbers in a list and sort the list using selection sort. **(8)**

15. a) Tabulate the different modes for opening a file and explain the same. **(16)**

(OR)

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  b) i) Appraise the use of try block and except block in Python with syntax. **(6)**

    ii) Explain with an example exceptions with arguments in Python. **(10)**

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