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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

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 $1 + 2 + 3 + 4 + 5 + \dots + 100$. (8)

(OR)

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

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12. a) i) What is a numeric literal ? Give examples. (4)
ii) Appraise the arithmetic operators in Python with an example. (12)

(OR)

- 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)

- 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)