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Reg. No.

Question Paper Code : 25 09

DEGREE EXAMINATION, DECEMBER/JANUARY 2019:

First Semester

Civil Engineering

GE 8151 — PROBLEM SOLVING AND PYTHON PROGRAMMING

(Common to all Branches)

(Regulations 2017)

Time : Three hours   Maxinium : 100 marks

Answer ALL questions. ,

PART A — (10 x 2 = 20 marks)

Distinguish between algorithm and program.

Write an algorithm to find the minimum number in a given list of numbers.

What are keywords? Give examples.

State the reasons to divide programs into functions.

Present the flow of execution for a while statement.

Define recursion with an example.

Relate strings and lists

Give a function that can take a value and return the first key mapping to that value in a dictionary..

9.   What is a module? Give example.

10.   Find the syntax error in the code given

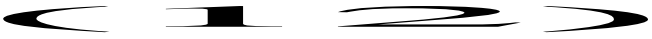while True print Mello world')

PART B — (5 x 16 = 80 marks)

11. (a) (i) Discuss about the building blocks of algorithms. (8)

    (ii) Write a recursive algorithm to solve towers of Hanoi problem. (8)

Or

(b) (i) Identify the simple strategies for developing an algorithm. (8)

    (ii) Write an algorithm to insert a card into a list of sorted cards. (8)

12. (a) (i) Sketch the structures of interpreter and compiler. Detail the differences between them. Explain how python works in interactive mode and 'script mode with examples. (2 + 2 + 4)

    (ii) Summarize the precedence of mathematical operators in python. (8)

Or

(b) (i) Explain the syntax and structure of user defined functions in Python with examples. Also discuss about parameter passing in functions.

    (ii) Write a python function to swap the values of two variables. (4)

13. (a) List the three types of conditional statements and explain them. (16)

Or

(b) (i) Python strings are immutable. Justify with an example. (8)

    (ii) Write a python code to perform binary search. Trace it with an example of your choice. (8)

14. (a) (i) Discuss the different options to traverse a list. (8)

    (ii) Demonstrate the working of +, * and slice operators in python. (8)

Or

(b) (i) Compare and contrast tuples and lists in Python. (4)

    (ii) Write a script in Python to sort n numbers using selection sort. (12)

15. (a) (i) EXplain the commands used to read and write into a file with examples. (8)

    (ii) Discuss about the use' of format operator in file processing. (8)

Or

(b) Describe how exceptions are handled in Python with necessary examples. (16)

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