C

Question Paper Code : 91208

B.E./B.Tech. DEGREE EXAMINATION, MAY 2024

First Semester

Civil Engineering

19UCS108- PROBLEM SOLVING AND PYTHON PROGRAMMING

(Common to ALL branches)

(Regulation 2019)

Duration: Three hours   Maximum: 100 Marks

Answer ALL Questions

PART A - (5 x 1 = 5 Marks)

1. Which of the following is used to translate a program written in a high-level language into its equivalent machine code line by line?   CO1- R

   (a) Loader   (b) Compiler   (c) Linker   (d) Interpreter

2. What is the output of the following statement?   CO2- App
   round(1.5) – round (-1.5)

   (a) 4   (b)3   (c)2   (d)1

3. Which of the following is equivalent to s[:-1]   CO3-U

   (a) s[:len(s)]   (b) s[len(s):]   (c) s[::]   (d) S[:-1]

4. A variable defined outside a function is referred to as   CO4- R

   (a) Local variable   (b) Only Variable   (c) Global Variable   (d) Private Variabe

5. What will be the output of the following code?   CO5- App

   a=((1,2),)*7

   Print(len(a[3:6]))

   (a) 2   (b) 4   (c) 3   (d) Error

PART – B (5 x 3= 15 Marks)

6. List the types of software with examples.   CO1- U

7. State the structure of a Python program.   CO2- U

8. Develop a Python program to print the sum of N numbers.   CO3- App

9. Define Lambda function with an example.   CO4- U

10. Outline Tuples with examples.   CO5- U

PART – C (5 x 16= 80 Marks)

11. (a) (i) Draw a flow chart to print the first 'n' prime numbers.   CO1- U   (8)

        (ii) Write an algorithm to find the greatest among three numbers. CO1- U   (8)

                                        Or

    (b) Summarize the basic organization of computers with a neat   CO1- U   (16)
        diagram.

12. (a) Outline the various Operators and Expressions in Python with   CO2- U   (16)
        examples.

                                        Or

    (b) (i) Develop a Python program to read the radius of a circle and   CO2- U   (8)
        print the area of the circle.

        (ii) Develop a Python program to read the marks of 5 subjects   CO2- U   (8)
         through the keyboard. Find out the aggregate and percentage
         of marks obtained by the student. Assume maximum marks
         that can be obtained by a student in each subject as 100.

13. (a) (i) Develop a Python program to calculate the sum of numbers   CO3- App   (8)
        from 1 to 20 which are not divisible by 2, 3 or 5.

        (ii) Develop a Python program to using the while loop, which   CO3- App   (8)
        prints the sum of every fifth number from 0 to 500.

                                        Or

    (b) (i) Illustrate the break and continue statements with examples.   CO3- App   (8)

        (ii) Outline the operation of while loop with an example.   CO3- App   (8)

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14. (a) Outline parameters and arguments in functions with examples.   CO4- App   (16)

<div align="center">Or</div>

    (b) Develop a Python function eval_Quadratic_Equa (a,b,c,x) which CO4- App   (16)
returns the value of any quadratic equation of the form
$ax^2 + bx + c$.

15. (a) Demonstrate with code the various operations that can be   CO5- U   (16)
performed on lists.

<div align="center">Or</div>

    (b) Outline the operations on dynamically manipulating dictionaries.   CO5- U   (16)