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Reg. No. :

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Question Paper Code : 91208

B.E./B.Tech. DEGREE EXAMINATION, NOV 2022

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 Variable
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

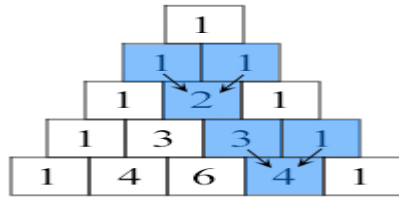
PART – B (5 x 3= 15 Marks)

6. A dog is tied to a wooden stake in a backyard. the leash is 3 meters long and it runs around in circles pulling the leash as far as it can go. Draw a flow chart to find the area does the dog have to run around in? CO1- App
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) Draw the flowchart and write a algorithm to solve the quadratic equation $ax^2+bx+c=0$ CO1- App (16)
- Or
- (b) Write an algorithm and flowchart to display factorial of a given number CO1- App (16)
12. (a) Outline the various Operators and Expressions in Python with examples. CO2- U (16)
- Or
- (b) (i) Develop a Python program to read the radius of a circle and print the area of the circle. CO2- U (8)
- (ii) Develop a Python program to read the marks of 5 subjects 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. CO2- U (8)
13. (a) (i) Develop a Python program to calculate the sum of numbers from 1 to 20 which are not divisible by 2, 3 or 5. CO3- App (8)
- (ii) Develop a Python program to using the while loop, which prints the sum of every fifth number from 0 to 500. CO3- App (8)
- 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)

14. (a) Outline parameters and arguments in functions with examples. CO4- App (16)
Or
(b) Write a Python function that prints out the first n rows of Pascal's triangle. Sample Pascal's triangle :



Each number is the two numbers above it added together

15. (a) Create a list of five elements .Pass list to a function and print the contents of the list inside the function. CO6- U (16)
Or
(b) Define List processing? List the different types of searching and sorting techniques with example? CO6- U (16)

