C **Reg. No. :** | | | | | | | | | | |

Question Paper Code : U1208

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

First Semester

Civil Engineering

21UCS108- 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 diagram.	CO1- U	(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)	Develop a Python function eval_Quadratic_Equa (a,b,c,x) which returns the value of any quadratic equation of the form $ax^2 + bx + c$.	CO4- App	(16)
15.	(a)	Demonstrate with code the various operations that can be performed on lists.	CO5- U	(16)
		Or		
	(b)	Outline the operations on dynamically manipulating dictionaries.	CO5- U	(16)