

JK Lakshmipat University, Jaipur
INSTITUTE OF ENGINEERING AND TECHNOLOGY
 End Term Examination, Dec 2021
 Bachelor of Computer Application, Semester I

Subject: **Problem Solving with Python (CS1115)**

Roll No.....

Time: 2 hours

Max. Marks: 20

Instructions to students:

1. Do not write anything other than your roll number on the question paper.
2. Assume suitable data wherever required and mention it clearly.
3. Writing nomenclature and drawing neat sketches/schematics/flow charts wherever required is an integral part of the answer.

Q. 1	Draw a flow chart and write a Python program to calculate the electricity bill (accept a number of units from the user) according to the following criteria: <table><thead><tr><th>Units</th><th>Price</th></tr></thead><tbody><tr><td>First 100 units</td><td>Rs 2 per unit</td></tr><tr><td>After 100 units</td><td>Rs 3 per unit</td></tr><tr><td>After 200 units</td><td>Rs 4 per unit</td></tr><tr><td>After 300 units</td><td>Rs 5 per unit</td></tr><tr><td>After 400 units</td><td>Rs 6 per unit</td></tr><tr><td>After 500 units</td><td>Rs 7 per unit</td></tr></tbody></table>	Units	Price	First 100 units	Rs 2 per unit	After 100 units	Rs 3 per unit	After 200 units	Rs 4 per unit	After 300 units	Rs 5 per unit	After 400 units	Rs 6 per unit	After 500 units	Rs 7 per unit	03
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Q. 2	Write a Python program that accepts a string and calculates the number of digits and letters. Sample Data: 2021BCA028 Expected Output: Letters 3 Digits 7	03														
Q. 3	Write a Python program for calculating bananas in dozen. The user will enter the number of bananas gathered and the program will output the number of dozens as well as the number of excess bananas. Continue this process until a negative number or zero is entered. Example: Enter the number of bananas gathered: 43 You have 3 dozen and 7 bananas.	03														
Q. 4	Accept 8-digit number. Separate 8 digits into 4 parts. Display appropriate message in case of number with fewer digits. Two digits starting from the left in one variable. For example: Input: 31245690, a=31, b=24, c=56, d=90. Print which number is the largest. Divide each number by 2, take the integer part and create a new number again as abcd.	04														
Q. 5	Define a function named 'perfect' that determines if a parameter number is a perfect number. Use this function in a program that determines and prints all the perfect numbers between 1 and 1000. [An integer number is said to be a "perfect number" if its factors, including 1 (but not the number itself), sum to the number. E.g., 6 is a perfect number because 6=1+2+3].	04														
Q. 6	Write a Python program to print the difference between the largest and smallest values in an input list of integers and also print another list whose values are even numbers.	03														