

Subject – Lab-Data Analytics	Max Marks - 100
Program - MCA Plus	Passing Marks - 50
Semester - IV	Total Question - 10 (10 Marks Each)

Important: Student should attempt every question and submit the answer sheet with response to below questions.

**Questions:**

1. Write a function that adds two numbers, and divides the result by 2.
2. Calculate the correlation between lengths and diameters (use the cor function).  
cor(lengths, diameters)
3. Calculate the volume of each cylinder ( $V = \text{length} * \pi * (\text{diameter} / 2)$ )
4. Calculate the mean, standard deviation, and coefficient of variation of the volumes.
5. Assume your measurements are in centimetres. Recalculate the volumes so that their units are in cubic millimetres. Calculate the mean, standard deviation, and coefficient of variation of these new volumes.
6. Read in a vector that contains "A", "B", "C" and "D" (use the c() function).  
Using rep, produce this:
7. Draw 10 random letters from the lowercase alphabet, and sort them alphabetically (Hint: use sample and sort). The solution can be one line of code.
8. Draw 5 random letters from each of the lowercase and uppercase alphabets, incorporating both into a single vector, and sort it alphabetically.
9. Calculate the sample mean and standard deviation.
10. Read the cereal data, and produce quick summaries using str, summary, contents and describe(recall that the last two are in the Hmisc package). Interpret the results.

**Kindly mention the following details at the top of your Lab Submission Sheet:**

Reference/enrollment number.	
Student Name	
Subject Name	
Semester/Year	

**\*Please Note:** If any of the details are missing your Lab Submission will not be considered for evaluation. University is not responsible for any consequences arising due non submission of details.