SCHOOL OF SCIENCE AND TECHNOLOGY

DEPARTMENT OF DATA SCIENCE AND ANALYTICS

SUMMER 2024 – ASSIGNMENT 1

COURSE CODE: STA 4020A

UNIT NAME: DESIGN AND ANALYSIS OF EXPERIMENTS

DATE: 15TH MAY 2024   **TOTAL MARKS**: 20 MARKS

INSTRUCTIONS:

For this exercise:

1. ANSWER ALL QUESTIONS
2. Do all your working in the Rmarkdown (.rmd).
3. Submissions should be in either a `.ipynb` or `.rmd` file
4. NO SUBMISSIONS SHOULD BE DONE VIA EMAIL

QUESTION

Consider the following two sets of data:

1) Write the hypothesis to be tested
2) Calculate the correction factor, Total SS, Treatment SS and Error SS
3) Generate the ANOVA table
4) At 5% and 10% levels of significance, test the hypothesis and make conclusions

Case 1: Equal Replications

		Treatment		
		A	B	C
Replicate	1	23	42	47
	2	36	26	43
	3	31	47	43
	4	33	34	39

Case 2: Unequal Replications

		Treatment			
		A	B	C	D
Replicate	1	2	1.7	2	2.1
	2	2.2	1.9	2.4	2.2
	3	1.8	1.5	2.7	2.2
	4	2.3		2.5	1.9
	5	1.7		2.4	