Rajarata University of Sri Lanka
Faculty of Social Sciences and Humanities

Bachelor of Arts Honours in Environmental Management Degree Program
Year 4 Semester I Examination – May/June 2025

EMGT41022 Data Analysis in Environmental Management
(Practical Examination)

Time: **One (1) hour**
No of Questions: **Two (02)**
No of Pages: **Two (02)**
Instructions: **Answer both questions**

1. The Following table presents the monthly water consumption of ten (10) households in a village, along with other variables that may affect water consumption.

Consumption (Units/Month) (Y)	Gender (Head of the Household) Male-1 Female-0 (X1)	Monthly Income (Rs) (X2)	Education Level 1-Primary 2-Secondary 3-Tertiary (X3)	No. of Members in the Household (X4)
20	1	50000	2	4
40	1	80000	3	7
12	0	30000	1	3
15	0	40000	1	4
8	0	20000	2	3
30	1	60000	3	2
25	1	60000	2	7
35	1	70000	3	8
18	0	35000	2	4
32	0	70000	1	6

Using the table above, perform the following statistical analyses using SPSS software:

i. Generate descriptive statistics.

ii. Compute the correlation matrix.

iii. Conduct a multiple regression analysis, considering *monthly water consumption* as the dependent variable (Y), and the remaining variables (X1–X4) as independent (exogenous) variables. Provide an interpretation of the results.

(25 Marks)

2. Assume that you have been assigned to carry out a case study to identify the factors influencing the prevalence of chronic kidney disease (CKD) in the Anuradhapura District. Perform a binary logistic regression analysis using STATA software, considering the dependent variable as *CKD status* (affected = 1, non-affected = 0), and select four independent variables of your choice with 10 observations.

(15 Marks)