



**RAJARATA UNIVERSITY OF SRI LANKA  
FACULTY OF APPLIED SCIENCES**

B.Sc. (General) Degree in Applied Science  
Third Year – Semester I Examination – October/November 2014

**CHE 3208- ENVIRONMENTAL CHEMISTRY AND RECYCLING  
OF WASTES**

Answer Only Four (4) questions

Time: Two hours

1. (a) Define “Environmental Science” and discuss the relationships between Atmosphere, Hydrosphere, Geosphere, Biosphere and Technology.  
[10 marks]

- (b) What are the two main branches of hydrology, give a brief explanation

[05 marks]

- (c) Explain the sources and uses of water and describe the water cycle.

[10 marks]

2. (a) Give a brief explanation on “Water pollution” and discuss the types of industrial wastes in detail

[15 marks]

- (b) What is meant by “Drinking water standards” explain the purpose of these standards

[10 marks]

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3. (a) Describe the Outer layers of the Earth Crust [05 marks]  
(b) Explain the Biological weathering process in detail [05 marks]  
(c) Discuss the products of Carbonic acid ( $\text{H}_2\text{CO}_3$ ) which is the most common weathering reagent in natural waters. [10 marks]
4. (a) Explain each step involved in the municipal water treatment, clearly explain the purpose of adding chemicals in each step. [10 marks]  
(b) Discuss the Primary, Secondary and Tertiary waste water treatments in detail used for drinking water [15 marks]
5. (a) What is the purpose of the atmosphere, explain in detail [10 marks]  
(b) Deduce and show that pressure decreases exponentially as the altitude increases. The Average molar mass of atmosphere  $M = 28.97 \text{ g mol}^{-1}$  in the troposphere,  $g$  acceleration of gravity  $981 \text{ cm s}^{-2}$  at sea level,  $R$  gas constant  $8.314 \times 10^7 \text{ erg deg}^{-1} \text{ mol}^{-1}$ . [15 marks]