



# EASERN UNIVERSITY, SRI LANKA

## SPECIAL DEGREE EXAMINATION IN CHEMISTRY 2010/2011

### CHS 04 ENVIRONMENTAL CHEMISTRY

Answer All Questions

Time: One Hour

1. (a) What is acid rain? What are the factors responsible for the occurrence of acid rain? Briefly describe their environment effects.

(25 Marks)

(b) What is "Photochemical Smog"? Briefly discuss the effects of "Photochemical Smog" on human health and the environment.

(25 Marks)

(c) Briefly explain major effects in the agriculture fields associated with the soil pollution.

(25 Marks)

(e) What is "Thermal Pollution"? Briefly discuss the causes and effects of the "Thermal Pollution".

(25 Marks)

(P.T.O)

2.

(a) Describe the pollution of the Batticaloa lagoon indicating the possible sources of pollution. Discuss ways to avoid such types of pollution. Briefly describe the environmental effects of such water pollution.

(35 Marks)

(b) Explain the difference between primary and secondary municipal sewage treatment processes. List each major element in the process and explain their function in your answer.

(35 Marks)

(c) (i) What is the difference between Biological Oxygen Demand (BOD) and Chemical Oxygen Demand (COD)?

(ii) 6 ml of wastewater is diluted to 300 ml distilled water in standard BOD bottle. Initial Dissolved Oxygen (DO) in the bottle is determined to be 8.5 mg/l. DO after 5 days at 20°C is found to be 5 mg/l. Determine BOD<sub>5</sub> of wastewater and compute the ultimate BOD. The BOD reaction rate constant,  $k$ , at 20°C is known to be 0.23 per day.

(30 Marks)

@@@@@