



THE OPEN UNIVERSITY OF SRI LANKA
 PGD /M.Sc. In Environmental Sciences Level 07 (2014)
 NEP 2207 Climate Change
 Final Examination 2014

Date: 04 th April 2014

Time.1.30pm - 4.30 pm

Answer any Four (04) Questions only

1. (i) *The seasons attributed to the tilt of the earth rotational axis to the plane defined by the earth's orbit.* Why?
- (ii) What would be the seasons if there were no axis tilt?
- (iii) What is the basis for subdividing the atmosphere in to four spheres?
Name the bottom layer and give five (5) characteristics of the bottom layer.
- (iv) Why is the aurora visible only at high latitudes?

2. (i) *Most atmospheric aerosols are products of processes occurring at the earth's surface.* Identify several of these processes.
- (ii) Present several examples of how "minor" constituents (gases and aerosols) of the atmosphere play important roles in the functioning of the environment.
- (iii) Distinguish between natural sources of air pollutants and air pollutant sources related to human activities.
- (iv) Explain why the temperature variation between day and night, and between winter and summer, are much greater on land than over water

3. (i) *Many types of electromagnetic energy together make up the electromagnetic spectrum.* Describe how energy levels vary within the electromagnetic spectrum and name these energy levels.
- ii) Explain the natural greenhouse effect which has operated for billions of years.
- (iii) What would have been the temperature of the earth without the natural greenhouse gases? Give the reasons for your answer.
- (iv) Explain the enhanced greenhouse effect giving the reasons for the enhancement

4. (i) Give an account of the likely impacts of climate change in various sectors.

(ii) "Many adaptation policies would make good sense even without climate change". Elaborate on this statement.

5. (i) Kyoto protocol establishes three mechanisms to give parties credit for reducing emissions in other countries. Explain briefly these mechanisms.

(ii) Which one of this mechanism gives credits for developing countries? Explain this mechanism.

(iii) Give two emissions-reducing or emissions-avoiding projects where Sri Lanka could get benefit from the above mechanism.

6. (i) Explain the term "Emission Scenarios". How do you develop emission scenarios and explain its use in predicting global warming.

(ii) Estimation of climate change in the future is done in a number of stages. Explain these stages.