



THE OPEN UNIVERSITY OF SRI LANKA

M.Sc. In Environmental Sciences Level 10 (2018-2019)

ZYPA 604 NEPA 604 / NEP 2207 / NEP 2216- Climate Change -

NBT 1

Date: 21-07- 2019

Time. 13.00 hrs 14. 30

Answer Any Three (3) questions

1. (i) Explain the term "Emission Scenarios". How do you develop emission scenarios and explain its use in predicting global warming.
 (ii) How do we go about estimating climate change in future?
 (iii) Basically three model types are used for investigating the response of the climate system to various forcings, for making climate predictions. Name these models and briefly explain the models.
 (iv) Explain the ways to find out the reliability of the Models used to make Projection of future Climate Change.

2. (i) What are the main factors to determine the Earth's global mean climate? Name the important properties.
 (ii) What are the changes that occurred in the atmosphere and surface that alter the energy budget of the Earth? What will happen to the climate if the energy budget changes?
 (iii) There are three fundamental ways the Earth's radiation balance can change, thereby causing a climate change. Name these three ways and explain it briefly.
 (iv) Briefly explain why projections of climate change are uncertain?

3. (i) Uncertainties in IPCC Assessments can be classified in several different ways according to their origin. What are the two primary types of uncertainties?
 (ii) Why do you say it's a good thing to burn wood as fuel? Surely wood burned equals carbon emitted?
 (iii) Name the Natural Greenhouse Gas Constituents. How many of the Natural Greenhouse Gas Constituents are undergoing well-documented increases in concentration due to human activity? Name those constituents and briefly explain the reasons for increase.
 (iv) What is meant by the New Greenhouse gases? There is noticeable reduction in some of above gasses since 1987, why?

4. (i) Global temperature rise is leading to sea level rise. Briefly explain the main contributions to the sea level rise
(ii) What is the effect to the ocean due to uptake of anthropogenic carbon since industrialization and impact of it?
(iii) In recent decades, changes in climate have caused impacts on hydrological systems in many regions. Explain these impacts.
(iv) What are the recent observed changes in the Cryosphere?

 5. (i) Explain why International cooperation is necessary to mitigate Climate Change Impacts?
(ii) What is the primary institutional forum for climate negotiation? Explain the ultimate objective of the above International Forum for climate negotiations
(iii) Signatories to the above forum are split into three groups. Name these groups and their responsibilities
(iv) What was the first binding step toward implementing the principles and goals provided by the above forum? Briefly explain principal concept of it.
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