

2025

M.A. 3rd Semester Examination

PAPER : M250319 (MOOCS)

**INTRODUCTION TO CLIMATE
CHANGE**

Full Marks : 100

Time : Three Hours

The figures in the margin indicate full marks.

*Candidates are required to give their answers
in their own words as far as practicable.*

1. Answer any *nine* questions : 2×9=18

- (a) Mention any two factors that control climate.
- (b) Define Global Warming Potential (GWP).
- (c) What is solar constant?
- (d) Name the different layers of the Atmosphere.
- (e) Define carrying capacity.
- (f) What are the main sectors contributing to greenhouse gas emissions?
- (g) Name two direct causes and two indirect causes of deforestation.

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- (h) Mention any two factors responsible for urban flooding.
- (i) What was the major goal of the Montreal Protocol?
- (j) Mention two causes of global sea-level rise.
- (k) What is the study of fossil pollen called?
- (l) What is palaeoclimatology?
- (m) Define global mean temperature.
- (n) Mention two anthropogenic sources of carbon dioxide.

2. Answer any *five* questions :

4×5=20

- (a) Comment on the three scales of climate.
- (b) What are Well-Mixed Greenhouse Gases (WMGHGs)?
- (c) Briefly comment on Urbanization.
- (d) What is the significance of water vapour in the greenhouse effect?
- (e) Write a short note on desertification.
- (f) Differentiate between historical and archaeological data as climate archives.
- (g) Write a short note on the role of ozone in the atmosphere.
- (h) Comment on the significance of the troposphere.

3. Answer any *four* questions :

8×4=32

- (a) Distinguish between weather and climate. Discuss the various elements and controls of climate with examples.
- (b) Examine the causes and consequences of climate change and climate variability.
- (c) Explain the various sources of palaeoclimatic data.
- (d) Discuss the various greenhouse gases, their sources, and their relative contributions to global warming.
- (e) Discuss the major human activities contributing to global warming.
- (f) Explain how industrialization has influenced climate change since the Industrial Revolution.

Internal Assessment : 30 marks
