

MA Semester II (2019-2021)

Paper - CC6, Unit III (Environment & Disaster Management)

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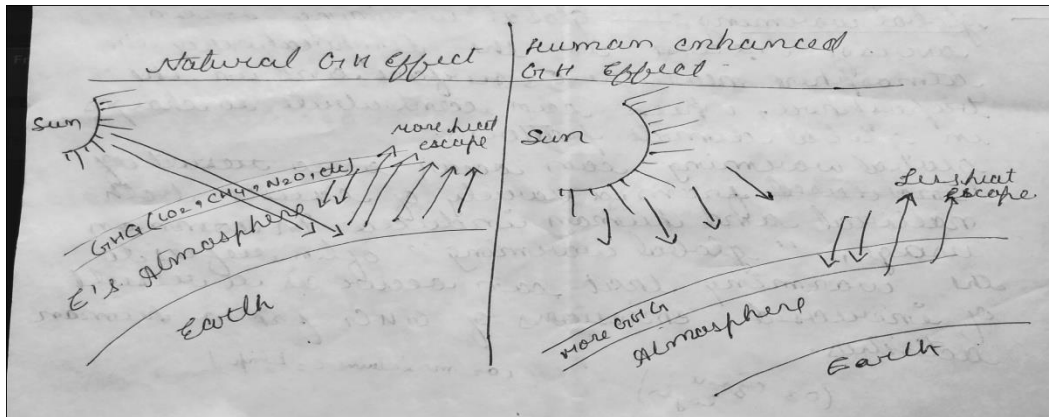
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Global Warming

Climate Change: It represents a change in the long-term weather patterns. Climate change is not a change in the weather in a particular day, it is the cumulative change of long term weather patterns i.e. change in climate. Climate change is the measurable effects of the continual warming trends. It is usually measured in major shifts in temperature, rainfall, snow, and wind patterns lasting for decades or more.

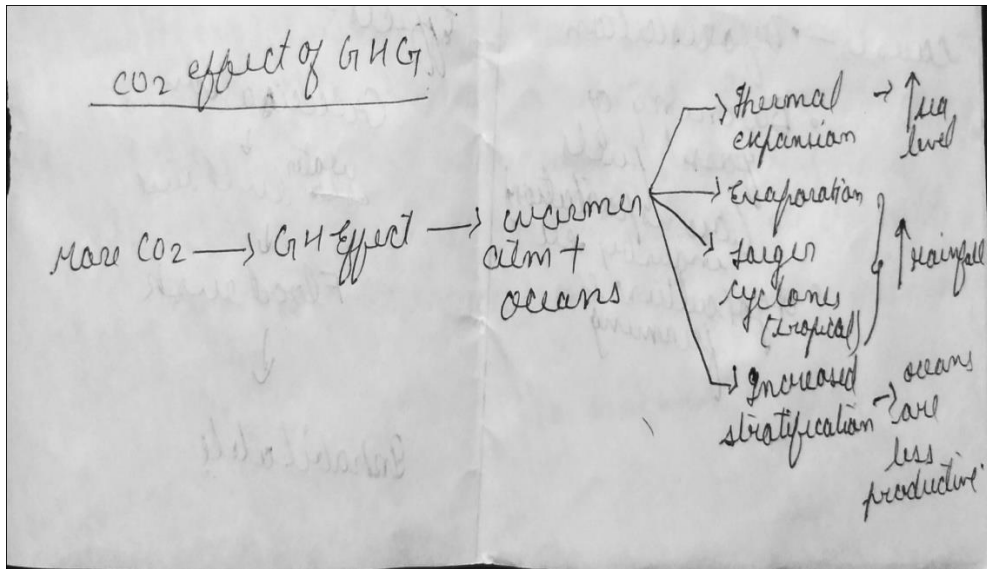
Global Warming: Global warming is an average increase in the temperature of the atmosphere near the earth's surface and in the troposphere, which can contribute to change in global climate patterns. Global warming can occur from a variety of causes, both natural and human induced. In common usage, "Global Warming" often refers to the warming that can occur as a result of increased emissions of green house gases from human activities.

Green House Effect: Greenhouse effects is a naturally occurring phenomenon that blankets the earth's lower atmosphere, and warms it, maintaining the temperature suitable for living things to survive. Greenhouse gases play an important role in the balance of earth's cooling and warming. Without greenhouse effects, the average temperature of the earth's surface would be -19°C instead of present value of 15°C and earth would be a frozen lifeless planet.



Greenhouse gases that causes warming:

1. Water Vapour – Is the biggest contribution to greenhouse effect and humans are not directly involved/ responsible for emission of water vapour. However, CO₂ and other greenhouse gases is increasing the amount of water vapour in the air by boosting the rate of evaporation. Since, the rate of evaporation rises with temperature, the amount of water vapour in the air at any one time is strongly related to the amount of the other greenhouse gases in the air.
2. Carbon Dioxide- It is the primary greenhouse gas emitted through human activities.
Sources are: fossil fuel to generate electricity
Fossil fuel for transportation
Fossil fuel for industrial process



3. Methane (CH₄): Wetlands (natural process) are the largest source, emitting CH₄ from bacteria that decomposes organic materials in the absence of O₂. Domestic livestock produce methane gas as a part of their normal digestive process

Greenhouse Gases	Lifetime (in years)
CO ₂	50-200
CH ₄	12
Nitrous Oxide (N ₂ O)	120
HFC	1-270
Sulfur Hexafluoride (SF ₆)	3200
Perfluoro Carbon (PFCs)	800-50,000