

Q 1: @ What are the main objectives of Clean Development Mechanism? Also explain the reasons for the criticism on Kyoto Protocol by the developed countries?

Answer:

**Clean Development Mechanism:** CDM is one of the three mechanisms stated in the Kyoto Protocol. The mechanism allows developed countries to play their part in reducing GHG emissions.

**Objectives of CDM:**

- ⇒ Allowed developed countries to reduce global emissions by funding projects in developing countries.
- ⇒ Supported ~~global~~ economic and environmental progress in developing nations.
- ⇒ Promoted clean technology transfer to developing countries.
- ⇒ To reduce the cost of complying with the provisions of the Kyoto Protocol for developed nations.

**Kyoto Protocol:** The Kyoto Protocol was an international agreement that aimed to reduce greenhouse gas emissions to combat climate change.

**Kyoto Protocol Criticism:**

- ⇒ The Kyoto Protocol was criticized by the U.S for exempting major emitters like China and India.
- ⇒ Emission targets were based on outdated data and have not been updated.
- ⇒ GHG emission affect the entire planet, so reducing them should be a shared responsibility.

⇒ Developing countries have limited ability to offset emissions from developed nations.

~~⇒ The Kyoto Protocol overlooked other harmful pollutants~~

⇒ Kyoto Protocol has not much paid attention to other pollutants such as sulfur dioxide and nitrogen oxide.

Part B] Differentiate b/w Sanitary & Industrial Landfills, also describe the land selection criteria for landfills?

Differences b/w Sanitary & Industrial landfills:

### Sanitary

### Industrial Landfills

- |   |  |
|---|--|
| ① Sanitary landfills handle household waste.                                      | ① Industrial landfills manage factory waste.                 |
| ② In sanitary landfills, layers of clay are used to separate the layers of waste. | ② In Industrial landfills, no such layers are used.          |
| ③ In sanitary landfills, pipelines are constructed to extract landfill gases.     | ③ No pipelines connections are used in industrial landfills. |
| ④ Sanitary landfills are near cities  | ④ Industrial landfills are near factories.                   |
| ⑤ Sanitary landfills are monitored for environmental impacts.                     | ⑤ Industrial landfills focus on hazardous materials.         |

# Land Selection Criteria for Landfills:

- ① Distance from Homes & Far from residential areas to reduce impact.
- ② Soil Type: Soil should not allow water to pass through easily to prevent leaks.
- ③ Proximity to Water: Keep landfills away from rivers and lakes to prevent pollution.
- ④ Distance from Protected Areas: Keep away landfills from parks and wildlife areas.
- ⑤ Water Table Depth: The water level should be deep to protect ground water.
- ⑥ Accessibility: The site should be easily accessible by roads to allow for efficient transportation of waste.

Q.No. 2: Write a short note on artificial intelligence?

**Def:** Artificial Intelligence (AI) is the study of machines that can perform tasks similar to human thinking.

**Discovery:** The term Artificial Intelligence was introduced by John McCarthy in 1956 at the Dartmouth conference at Massachusetts Institute of Technology (MIT).

**Example:** Tesla's Autopilot, an AI-driven system that introduced by Tesla in October 2015, helping drivers with steering, braking, and lane changes, making driving safer and more automated.

## Two Subsets of AI:

- ① Machine Learning: AI where computers learn from data to make decisions.
- ② Deep Learning: A type of machine learning using layered neural networks to learn from data.

**Uses of AI:** AI is used by financial institutions, scientists, doctors, psychologists, engineers, planners, and security services.

## Advantages of AI:

- ⇒ Smart speakers and digital assistants like (Siri, Alexa, Google Assistant etc).
- ⇒ Facial recognition (unlocking phones, making payments etc).
- ⇒ Improved AI services like Google Translate.
- ⇒ Medical assistance (helping doctors diagnose and assess health).

Try to write full sentences

## Disadvantages of AI:

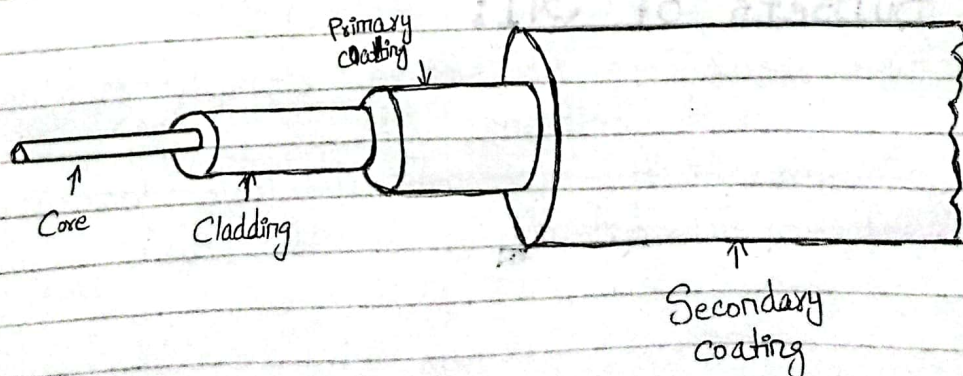
- ⇒ Job losses (machines replacing humans can cause unemployment).
- ⇒ Lack of creativity (AI cannot generate create original ideas).
- ⇒ High Cost (developing and maintaining AI is expensive).
- ⇒ Human error (Although AI reduce human error, mistakes and bias can still exist in the programming).

**Part B** write short note on: ① Fibre optics ② Global Positioning system.

**Fibre Optics:** Fibre optics use thin strands of glass or plastic to send light signals for communication.

## Basic Structure of Optical Fibre:

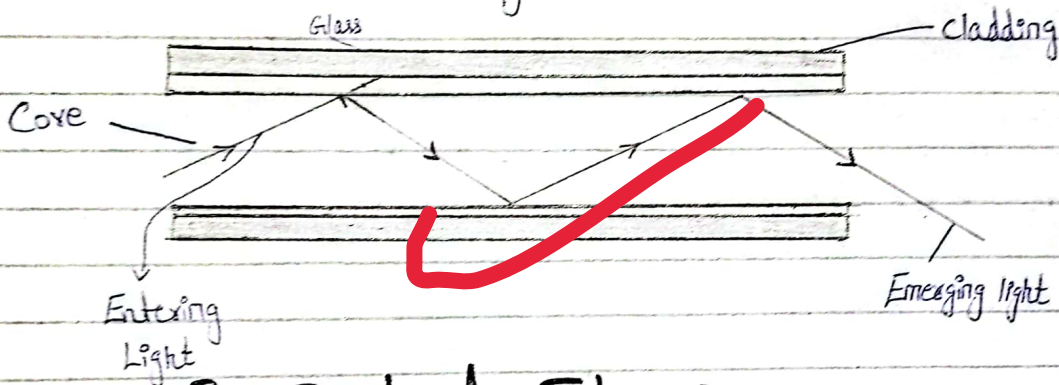
- ① Core: The middle part made up of glass that carries the light.
- ② Cladding: The layer that made up of glass or plastic around the core that keeps the light inside.
- ③ Jacket: The outer layer that protects the fibre.



## Types of Optical Fibers:

- ① Single-Mode Fiber: Has a small core and is used for long-distance communication with less signal loss.
- ② Multi-Mode Fiber: Has a larger core and is used for shorter distances with more signal loss.

**Working of Optical Fiber:** Light travels through the core by bouncing off the cladding, allowing data to be sent over long distances.



## Uses of Optical Fibers:

- ⇒ For internet and phone connections.
- ⇒ In tools for looking inside the body like (Medical).
- ⇒ For TV and radio signals.
- ⇒ Connecting computers and services.

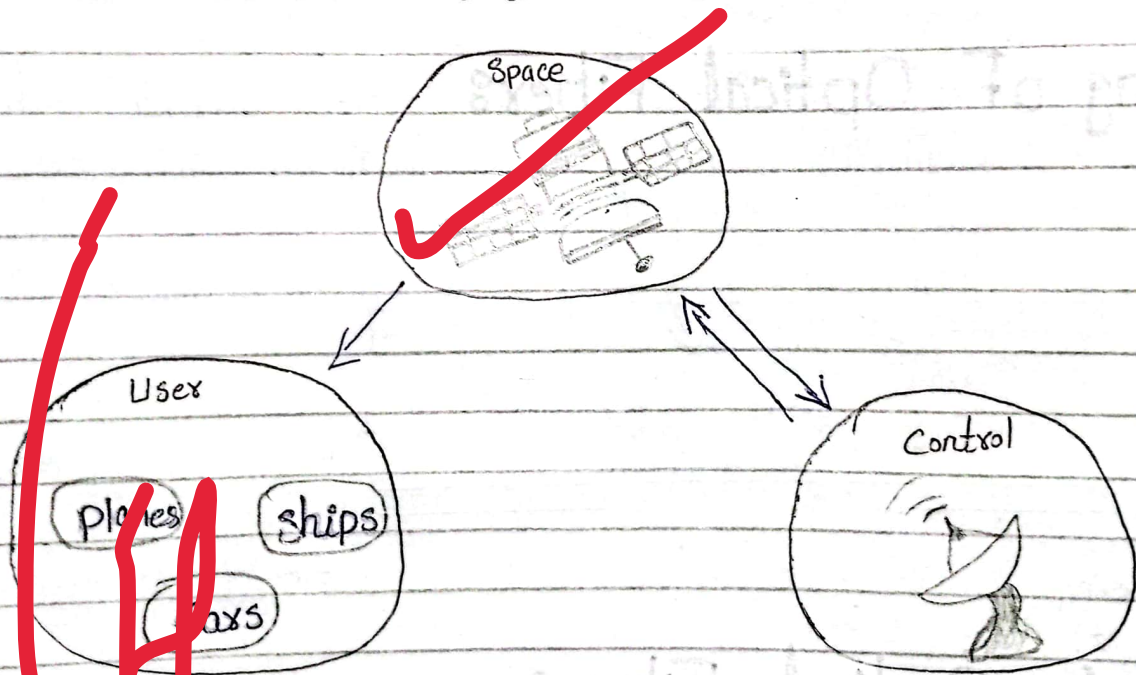
## ⑥ Global Positioning System (GPS):

Def: GPS is a system that uses satellites to provide location and time information anywhere on Earth.

**The Invention of GPS:** GPS was created by the U.S. Department of Defence and started working in 1995.

**Components of GPS:** GPS is made up of three different components that are called segments, which work together and provide location information.

- ① Satellites: Orbit Earth and send signals to receivers.
- ② Ground Stations: Track and manage the satellites signals.
- ③ Receivers: Devices that receive signals from satellites to find location and time.



GPS Components.

Good answers!!!