8/4/23

ASSIGNMENT 4

Unit-4 Environmental Pollution

Q.1 Write difference between pollutants and pollution with examples in brief.

→ Pollution refers to the presence of unwanted substances or energy in the environment that cause harmful effects to living organisms and the natural world.

- Examples: Air pollution caused by emission from cars, factories and power plants. Water pollution ~~caused~~ caused by sewage, chemicals and other contaminants.

→ Pollutants refers to the specific substance or materials that cause pollution. They can be natural or man-made

- Examples: Carbon Monoxide (CO) from vehicle exhausts. Lead (Pb) from Industrial Activities. Mercury (Hg) from coal-fired power plants.

Q.2 Detail on Air pollution. Classify its pollutants

→ Air pollution is the presence of harmful and unwanted substances in the air or atmosphere. These substances can be gases, particles or biological molecules that have a negative impact on human ~~heat~~ health and the Environment. Air pollution can cause a range of health problems like respiratory & heart diseases, stroke and cancer. It can also damage crops, forests & other ecosystem.

Air pollutants are classified as primary and secondary pollutants.

→ Primary air pollutants are emitted directly into the atmosphere by the original source. For example : CO_2, NO, SO_2, CO, CFC

→ Secondary air pollutants are formed because of the reactions between primary pollutants and other elements in the atmosphere. For example : Ozone, Acid Rain.

Q.3 Enlist sources, causes and effects of water pollution.

→ Water pollution occurs when contaminants are introduced into the water bodies causing harm to the environment and living organisms.

→ Sources of water Pollution :

i) Industrial Activities : Mining, Manufacturing and oil & gas drilling can release toxic chemicals.

ii) Agriculture Practices : Pesticides, herbicides and fertilizers used in agriculture can contaminate the water bodies (groundwater).

iii) Municipal Wastewater : Sewage and wastewater from homes can contain bacteria, viruses.

iv) Oil Spills : Accidental oil spill from offshore drilling or transportation.

v) Landfills : Can release pollutants such as chemicals, heavy metals and pathogens.

→ Causes of water Pollution :

i) Point Source Pollution : Pollution that comes through

from a single source like discharge pipe.
ii) Non-Point Source pollution: Pollution that comes from diffuse sources like agricultural runoff.

→ Effects of water Pollution:
i) Harm to Ecosystems
ii) Public Health Risks
iii) Economic Impacts
iv) Depletion of water Resources
v) Habitat Destruction.

Q.4 Soil Pollution: Pollutants and Effects.
→ Soil pollution is the contamination of soil by harmful substances that can have negative effects on environment, human health and ecosystem functionality.

→ Pollutants of Soil Pollution:
i) Heavy Metals: like lead, cadmium, mercury from mining, sewage sludge & industries.
ii) Pesticides and Herbicides: Chemical used in agriculture to control pests and weeds.
iii) Petroleum Products: Oil spill and leaks from underground storage tanks.
iv) Polycyclic Aromatic Hydrocarbons (PAHs): Formed during the incomplete combustion of fossil fuels.
v) Chlorinated Solvents: Such as Trichloroethylene (TCE) and Perchloroethylene.
vi) Radioactive Substances: Such as Uranium, radium and cesium

→ Effects of Soil Pollution :-
i) Reduced Soil fertility
ii) Contamination of groundwater
iii) Loss of Biodiversity
iv) Public Health Risks.

Q.5 Define Noise. What are the controls methods of noise pollution.

→ Noise refers to any unwanted or excessive sound that interferes with communication, causes annoyance or has negative effects on human health.

→ Control Methods of Noise Pollution :-
i) Noise Reduction : Achieved through the use of quieter machinery and equipment and by implementing noise reduction measures such as insulation and vibration damping.
ii) Noise Absorption : Use material such as acoustic panels, curtains and baffles. These are installed in building, vehicles etc. to reduce the amount of noise transmitted.
iii) Noise Barriers : Such as walls and fences can be erected to block the transmission of sound waves from the surrounding.
iv) Land use Planning : used to ensure that the noisy activities are located away ~~fo~~ from ~~resendit~~ residential areas, schools and hospitals, through zoning regulations and building codes.
v) Education and Awareness : To promote the

importance of noise pollution control and encourage individuals to take action to reduce noise pollution.

Q.6 Explain Nuclear Hazard.

→ Nuclear hazard refers to the any situation or event that involves the release of radioactive material from a nuclear facility such as nuclear power plant, a research reactor or a nuclear weapons facility.

Nuclear hazard can arise from a variety of causes like equipment failures, natural disasters, human error and deliberate acts of sabotage or terrorism.

The heath effects of nuclear hazards can vary depending on the nature and extent of the release. Acute radiation sickness can occur in individuals who are exposed to high levels of radiation in a short period of time and cause nausea, vomiting, diarrhea and fatigue. long-term exposure to lower levels of radiation can increase the risk of cancer, genetic mutations etc.

To mitigate the risk, nuclear facilities are subject to strict safety regulations and emergency response plans involving the evacuation of affected populations, the provision of medical treatment and decontamination services and the containment and cleanup of radioactive material.

Q.7 Short note on E-waste.

—↓ E-waste or electronic waste, refers to discarded devices such as computers, smart-phones, television and other electronic equipment. E-waste is growing environmental problem due to the rapid pace of technological innovation, which has led to a high turnover of electronic devices and an increasing amount of electronic waste.

E-waste contains hazardous material like lead, cadmium and mercury, which can pose significant risks to human health and environment if not managed properly.

To address this growing problem, many countries are promoting the responsible disposal and recycling of electronic devices. In addition, there are many initiatives and programs that promote the reuse and recycling of electronic devices, such as refurbishing and reselling used electronics or recycling them for their components parts.

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