Business Ethics:

Unit:2 Environmental Ethics:

Meaning:

Ethics can be defined as, " moral principles that govern a person's behavior or the conducting of human activity."

Environmental ethics is a branch of philosophy which tries to help us understand what is right when it comes to our relationship to the environment.

The environment can be defined as, "the surroundings or conditions in which a person, animal, or plant lives or operates together under one sun."

Environmental ethics can be defined as," it is a philosophy which studies the relationship between human and its surrounding natural environment. "

Environmental ethics help men to understand its relationship with nature and makes him understand better about his obligations towards the environment. Factors that involved in environmental ethics are air pollution, depletion of natural resources, loss of **biodiversity, loss of ecosystems, and global climate change.**

Pollution and Resource depletion :

Air Pollution:

Air pollution is the contamination of air due to the presence of substances in the atmosphere that are harmful to the health of humans and other living beings, or cause damage to the climate or to materials.[1] There are many different types of air pollutants, such as gases (including ammonia, carbon monoxide, sulfur dioxide, nitrous oxides, methane, carbon dioxide and chlorofluorocarbons), particulates (both organic and inorganic), and biological molecules. Air pollution can cause diseases, allergies, and even death to humans; it can also cause harm to other living organisms such as animals and food crops, and may damage the natural environment (for example, climate change, ozone depletion or habitat degradation) or built environment (for example, acid rain).[2] Air pollution can be caused by both human activities and natural phenomena.[3

Causes of Air pollution

- Vehicle exhaust fumes
- Fossil fuel-based power plant
- Exhaust from Industrial plant and factories
- Construction activities
- Natural causes
- Household activities

Effects of Air pollution

- Accelerated (Prompt) global warming
- Human Respiratory and heart problems
- Wild-life Endangerment
- Acid rain

Air Quality Index (AQI) Values	Levels of Health Concern	Colors
When the AQI is in this range:	*..air quality conditions are:*	*...as symbolized by this color:*
0 to 50	Good	Green
51 to 100	Moderate	Yellow
101 to 150	Unhealthy for Sensitive Groups	Orange
151 to 200	Unhealthy	Red
201 to 300	Very Unhealthy	Purple
301 to 500	Hazardous	Maroon

Land Pollution:

Land pollution occurs when trash, compost, and other toxins are dumped on the land, contaminating or polluting it. Land pollution is caused by human activities. The degradation of the earth's land surfaces, both above and below ground level, is referred to as land pollution. The accumulation of solid and liquid waste products, which contaminate groundwater and soil, is the cause. The greater the permeability of the soil, the greater the risk of land contamination.

Causes:

- **Agricultural Activities –** As animal production grows, it becomes decoupled from crop production, causing normal nutrient cycles between plants, soil, and animals to be severely disrupted, resulting in the widespread use of synthetic herbicides, insecticides, bactericides, and fertilizers, all of which contribute to pollution.
- **Mining Activities –** Mining has the potential to pollute the air and water supply, damage biodiversity and ecosystems, and permanently alter natural landscapes. Mining harms the ecosystem by destroying habitats, causing soil erosion, and polluting surface water, groundwater, and soil.
- **Urbanization –** Intensive urbanization will exacerbate poverty by preventing local municipalities from providing services to all residents. Increased air pollution from concentrated energy usage has a direct effect on human health. Lead levels in urban air are elevated as a result of automobile emissions.
- **Nuclear Waste –** The soil is also contaminated by radioactive waste from nuclear research stations and nuclear power plants, as well as radioactive fallout from nuclear explosions. Since radioactive materials have a long half-life, they can survive in the soil for long periods of time.

Land Pollution Effects

Land pollution can harm the human body in a variety of ways. Toxic waste and contaminants can be ingested by people. Disposal of hazardous radioactive wastes also contributes to land contamination. Chronic respiratory disease, lung cancer, heart disease, and even brain damage are all long-term health consequences.

- **Climate Change –** Land contamination, such as that caused by mining, farming, and factories, may allow harmful chemicals to enter the soil and

water. These chemicals have the potential to kill animals and plants, destroying the food chain. Landfills emit methane, a greenhouse gas that contributes to global warming.

- **Acid Rain –** Forests, especially those at higher elevations, are also harmed by acid rain and fog. Acid deposits deplete vital nutrients like calcium and allow aluminum to be released into the soil, making it difficult for trees to absorb water. Acids also damage the leaves and needles of trees.
- **Deterioration of fields –** A chain reaction occurs as a result of soil contamination. It alters soil biodiversity, decreases soil organic matter, and reduces soil's filtering ability. It also contaminates water contained in the soil and groundwater, resulting in nutrient imbalances in the soil.
- **Respiratory health problems –** Air pollution can irritate your airways, causing shortness of breath, coughing, wheezing, asthma attacks, and chest pain. Lung cancer, heart attacks, strokes, and, in the worst-case scenario, premature death are all risks associated with air pollution exposure.

Solutions to Land Pollution

To reduce land emissions, reduce, reuse, and recycle. It is essential to practice reforestation and a forestation. Organic fertilizers, an integrated pest control method, and crop rotation can all be used by farmers. One of the most important ways to help minimize landfill waste, protect natural resources, preserve wildlife, reduce noise, reduce energy use, and slow global warming is to incorporate recycling habits into your everyday life.

Reforestation avoids river and lake silting by reducing surface erosion and preserving the fertile topsoil. It prevents the soil surface from sealing and cuts down on the amount of rainwater that runs off. When compared to petroleum-based plastics, biodegradable plastics produce significantly less waste. As biodegradable plastics degrade, they decompose into nontoxic, harmless components. Just 32% of the greenhouse gases released by petroleum-based plastics are produced by them.

Water Pollution

Water pollution is said to occur when toxic pollutants and particulate matter are introduced into water bodies such as lakes, rivers and seas. These contaminants are generally introduced by human activities like improper **sewage treatment** and oil spills. However, even natural processes such as eutrophication can cause water pollution.

Other significant causes of water pollution include:

- Dumping solid wastes in water bodies
- Disposing untreated industrial sewage into water bodies
- Human and animal wastes
- Agricultural runoff containing pesticides and fertilizers

The effects of water pollution are very pronounced in our environment. Furthermore, toxic chemicals can bioaccumulation in living beings, and these chemicals can travel their way up the food chain, ultimately reaching humans.

Among the other types of pollution, water pollution has severe consequences on humans. For instance, in 1932, a grave case of water pollution incapacitated the inhabitants of an entire city in Japan with neurological diseases and mental illness for many decades. However, the immediate cause was not apparent but was eventually attributed to acute mercury poisoning. Methyl mercury was dumped into the surrounding bay and had ultimately bio accumulated inside the fish. The local population then consumed these fish, and this resulted in the manifestation of ill effects and neurological diseases.

Other consequences of water pollution include:

- Disruption of the ecosystem
- Threats to marine life
- Increased risk of water-borne diseases
- Increases toxic chemicals (such as mercury) in water bodies
- Eutrophication

Noise Pollution

Noise pollution refers to the excessive amount of noise in the surrounding that disrupts the natural balance. Usually, it is man-made, though certain natural calamities like volcanoes can contribute to noise pollution.

In general, any sound which is over 85 decibels is considered to be detrimental. Also, the duration an individual is exposed plays an impact on their health. For perspective, a normal conversation is around 60 decibels, and a jet taking off is around 15o decibels. Consequently, noise pollution is more obvious than the other types of pollution.

Noise pollution has several contributors, which include:

- Industry-oriented noises such as heavy machines, mills, factories, etc.
- Transportation noises from vehicles, aero planes, etc.
- Construction noises
- Noise from social events (loudspeakers, firecrackers, etc.)
- Household noises (such as mixers, TV, washing machines, etc.)

Noise pollution has now become very common due to dense urbanization and industrialization. Noise pollution can bring about adverse effects such as :

- Hearing loss
- Tinnitus
- Sleeping disorders
- Hypertension (high BP)
- Communication problems

Global Warming:

Global warming is the long-term warming of the planet's overall temperature. Though this warming trend has been going on for a long time, its pace has significantly increased in the last hundred years due to the burning of fossil fuels. As the human population has increased, so has the volume of fossil fuels burned. Fossil fuels include coal, oil, and natural gas, and burning them causes what is known as the "greenhouse effect" in Earth's atmosphere.

The greenhouse effect is when the Sun's rays penetrate the atmosphere, but when that heat is reflected off the surface cannot escape back into space. Gases produced by the burning of fossil fuels prevent the heat from leaving the atmosphere. These greenhouse gasses are carbon dioxide, chlorofluorocarbons, water vapor, methane, and nitrous oxide. The excess heat in the atmosphere has caused the average global temperature to rise overtime, otherwise known as global warming.

Global warming has presented another issue called climate change. Sometimes these phrases are used interchangeably, however, they are different. Climate change refers to changes in weather patterns and growing seasons around the world. It also refers to sea level rise caused by the expansion of warmer seas and melting ice sheets

and glaciers. Global warming causes climate change, which poses a serious threat to life on earth in the forms of widespread flooding and extreme weather. Scientists continue to study global warming and its impact on Earth.

Acid Rain:

Acid rain results when sulfur dioxide (SO_2) and nitrogen oxides (NO_x) are emitted into the atmosphere and transported by wind and air currents. The SO_2 and NO_x react with water, oxygen and other chemicals to form sulfuric and nitric acids. These then mix with water and other materials before falling to the ground.

While a small portion of the SO_2 and NO_x that cause acid rain is from natural sources such as volcanoes, most of it comes from the burning of fossil fuels. The major sources of SO_2 and NO_x in the atmosphere are:

- Burning of fossil fuels to generate electricity. Two thirds of SO_2 and one fourth of NO_x in the atmosphere come from electric power generators.
- Vehicles and heavy equipment.
- Manufacturing, oil refineries and other industries.

Winds can blow SO_2 and NO_x over long distances and across borders making acid rain a problem for everyone and not just those who live close to these sources.

Business and Environmental Ethics:

Eco-friendly Business Practices:

1.Choose alternative energy sources.

- If business want to save money on your energy costs and do something beneficial for the environment, consider making use of alternative energy sources such as solar, wind or geothermal. Depending on business office's location, business could potentially install solar panels on the roof or use energy from a nearby wind turbine farm.

2.Recycle your waste or e-waste.

- As tech advances, people continue to produce a lot of electronic waste, or "e-waste" -- think cell phones, tablets, computers, televisions and more. Unwanted devices often end up in landfills or is shipped to developing

countries, where the emissions from shredding, burning and dismantling these products is damaging to human health and the environment.

3.Use 3-R

- Reduce :Try to reduce the amount of waste you produce, as this is the best way to help the environment! If you cannot avoid producing the waste, try to wisely use of the resources.
- Reuse: using use the things for the next time.
- Recycling: is the process of making the resources able to be used after some alteration in the structure of the resources. Recycling includes re-melting, re-collecting and re-processing as well.

4.Promote a Healthy Working Environment. ..

- To make Purchase policies for raw material
- To Spread awareness among the workers, customers and related persons.
- To promote and planning to different Seminars, Matting's …etc
- To give discount and use different schemes for using environment friendly products.

To imitate the various Environmental protection Acts

- The Environment (Protection) Act,1986
- The Biological Diversity Act 2002 and Biological Diversity Rules
- The Public Liability Insurance Act and Rules 1991 and Amendment, 1992
- The National Environmental Tribunal Act,1995, Amendment 2010
- National Green Tribunal Act, 2010
- The National Environment Appellate Authority Act,1997
- The Biomedical waste (Management and Handling) Rules,1998
- The Environment (Siting for Industrial Projects) Rules, 1999

- The Municipal Solid Wastes (Management and Handling) Rules, 2000
- The Ozone Depleting Substances (Regulation and Control) Rules, 2000
- The Batteries (Management and Handling) Rules, 2001
- The Noise Pollution (Regulation and control) (Amendment) Rules, 2010

Conservation of natural resources:

- Use of Solar energy
- Use of Wind Energy
- Three R
- Work with Nature
- Stop wasting resources
- Use of Renewable resources
- Reduce or wisely use of Non renewable resources

Green Energy :

Green energy is energy that can be harnessed without harming the environment in a major way. It is environment-friendly and powers different systems while releasing very little or no toxic substances into the atmosphere. Green energy can also be defined as renewable energy since it is not exhausted at the source.

Importance of Green Energy

- **1. Renewable, sustainable, and dependable:** Green energy will not run out because it naturally replenishes. Fossil fuels can get depleted but green energy, on the other hand, is renewable and can be used for years to come without the fear of having it exhausted. As long as the sun keeps shining, solar energy will be available. It is a sustainable and almost infinite source of energy that also provides energy security for nations.
- **2. Alternative form of energy:** Green energy reduces the dependence that countries have on fossil fuels. Relying on fossil fuel to power industries can have negative implications due to the absence of energy security. Wars and geopolitical tensions can lead to the disruption of oil production and create a shortfall in supply. Green energy provides consumers with alternative energy sources. It protects them from exploitation by monopolies that supply power to citizens. In countries where power interruptions are common, using green energy sources would provide a steady supply of power and energy

- **3. Environmental-friendly:** Threats of global warming and climate change are real, and their effects are adverse. Scientists have been able to prove that climate change is not a myth but a reality. It is, therefore, important to prevent this phenomenon and keep the planet safer. Green energy results in less pollution and has minimal negative effects on the environment. It reduces the amount of greenhouse gases released into the atmosphere and minimizes the greenhouse effect. Going green would thus mitigate the effects of global warming and climate change.
- **4. Improved human health:** Industrialization has led to an increase in the demand for more energy in industries and homes. This has also caused the negative impact of high levels of toxic substances and impurities in the atmosphere. Green energy reduces environmental pollution and keeps the planet clean. It results in improved human health due to minimal pollutants in the air.
- **5. Low operating and maintenance costs:** Non-renewable energy is expensive because the supply is limited. It is also costly to put up the necessary infrastructure such as oil pipelines and maintain them. Green energy has lower maintenance and operating costs compared to non-renewable energy. A country can, therefore, reduce annual expenditure on energy and channel the extra amount to critical development projects.
- **6. Biodiversity-friendly:** Green energy is good for the environment. It reduces environmental degradation and enhances biodiversity as both flora and fauna have a thriving ecosystem to live in.
- **7. The growth of rural economy:** Investing in green energy creates jobs for citizens and improves the economy. When putting up green energy projects, the local economy will also grow because individuals will find employment by working on the projects. Money is also invested locally rather than being spent on the purchase of expensive energy from other nations. It is a smart way to fuel the growth of the local economy while still keeping the planet green.

Types of Green Energy

There are many types of green energy coming from a wide variety of sources. Some of these types are better suited to specific environments or regions, which is why there are so many renewable energy that filter into the energy grid.

Solar Energy

Solar is a clean source of energy which comes directly from the sun. Stars, in general, produce an unimaginable amount of energy via nuclear fusion— the process by which smaller atoms are fused together by heat and pressure to create

heavier atoms—with a whole lot of energy emitted in the process. This energy then reaches us via solar radiation, which we can collect and convert it into usable electricity.
Solar panels are perhaps the most common form of solar energy harvesting. These are panels full of things called photovoltaic cells. When the light from the sun hits these cells they create an electrical current through the photoelectric effect. [1] The current is then passed through an inverter to turn it into an alternating current. From here it can be used to power your home or added to the national grid mix. Read our guide to solar energy.

Wind Energy

Wind energy is actually another energy source powered by the sun. That's because winds are caused by the uneven heating of the atmosphere. This unevenness is affected by the topology of our planet, its spin, and how we orbit around the sun. Winds are further modulated by the surface they are passing over—either land or water.
Three blade wind turbines are most commonly associated with wind power. Unlike solar energy, these work on a rather simple principle. Wind turns the blades of the turbine, which turns an internal rotor. This rotor then moves the main shaft, which spins a generator and creates electricity.
Although wind may seem powerful, expansive wind farms are required in order to generate enough electricity to make an impact.
source

Hydroelectric Energy

Hydroelectric energy is produced by capturing the energy contained within flowing water. This is best achieved by forcing water to flow through a narrow path, thereby increasing its energy per square meter. This is commonly achieved by storing water in a reservoir or dam and selectively purging the water by opening an intake.
The gravitational potential energy stored by holding water higher up in the dam forces the water through the intake at incredible speed. When released, the flow spins a turbine which once again activates a generator, creating electricity.
Due to its efficacy, hydroelectricity is one of the most popular forms of green energy. In 2017 alone it is estimated that 4 billion tones of greenhouse gases were **not** released into our atmosphere by generating electricity from hydropower.

Biogas

The beauty of biogas, if it can be described as such, is that it is not only a green energy source but that it makes use of our waste products. Produced as a byproduct

when organic matter decomposes, biogas comes from materials such as sewage, food, agricultural waste, and manure.
These materials are stored in containers without oxygen, causing them to ferment and produce methane and carbon dioxide as well as other gases. The methane produced can then be sold on and used to heat homes, produce electricity and fuel vehicles. At the same time, the waste placed in a biogas digester becomes nutrient-rich fertilizer, perfect for farms and even home use.

Biomass

Just like biogas, biomass is a source of green energy that comes from plants and animals—both of which contain energy stored from the sun, often in the form of sugar or cellulose. In fact, when it comes to converting biomass into usable energy, much of this material is made into biogas as well as liquid bio fuels including ethanol and biodiesel. Other solid materials such as wood can be burned by themselves in order to heat buildings as well as to produce electricity.

Sustainable Development:

Sustainable development can be defined as an approach to the economic development of a country without compromising with the quality of the environment for future generations. In the name of economic development, the price of environmental damage is paid in the form of land degradation, soil erosion, air and water pollution, deforestation, etc. This damage may surpass the advantages of having more quality output of goods and services.

Sustainable Development Goals

- To promote the kind of development that minimizes environmental problems.
- To meet the needs of the existing generation without compromising with the quality of the environment for future generations.

Achieving Sustainable Development

Sustainable development can be achieved if we follow the following points:

- It can be achieved by restricting human activities.
- Technological development should be input effective and not input utilizing.
- The rate of consumption should not surpass the rate of salvation.
- For renewable resources, the rate of consumption should not surpass the rate of production of renewable substitutes.

- All types of pollution should be minimized.
- It can be achieved by sensible use of natural resources.

Examples of Sustainable Development:

- Wind energy
- Solar energy
- Crop rotation
- Sustainable construction
- Efficient water fixtures
- Green energy
- Sustainable forestry

The three core elements of sustainable development are :

- **Environmental Conservation:**
- The primary focus of sustainable development is to protect the environment so that the resources provided by it do not get destroyed.

- **Social Development:**
- It aims to attain the well-being of an individual and society at large. It entails the availability of necessary resources, proper healthcare, and good quality of life for people.

- **Economic Progress:**
- It encourages people to invest in sustainable efforts by persuading them through its long-term benefits and supporting both the environmental and social elements of the cause.