



# SYED AMMAL ENGINEERING COLLEGE

(Approved by the AICTE, New Delhi, Govt. of Tamilnadu and Affiliated to Anna University, Chennai)

Established in 1998 - An ISO 9001:2008 Certified Institution

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## DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

### UNIT-I

### ENVIRONMENT, ECOSYSTEMS AND BIODIVERSITY

#### PART – A

**1. What is meant by ecology?**

Ecology is study of interactions among organisms or group of organisms with their environment.

**2. What is meant by ecosystem?**

A group of organisms interacting among themselves and with environment.

**3. List various types of ecosystem.**

Forest ecosystem, grassland ecosystem, desert ecosystem and lake ecosystem.

**4. List out the structural components of ecosystem.**

The structural components of ecosystem are i.

Biotic components

ii. Abiotic components

**5. What is meant by primary production?**

The conversion of radiant energy into organic substances during photosynthesis by the primary producers.

**6. List out the characteristics of desert ecosystem.**

1) The desert air is dry and the climate is hot

2) Annual rain fall is less than 25cm.

3) Vegetation is poor.

**7. Distinguish between food chain and food web.**

Food chain	Food web
The sequence of eating and being eaten in an ecosystem.	The interlocking pattern of various food chains in an ecosystem.

**8. What is meant by food web?** The interlocking pattern of various food chains in an ecosystem is known as food web.

**9. What is meant by food chain?**

The sequence of eating and being eaten in an ecosystem is known as food chains.

**10. What is meant by ecological pyramid?**

The graphical representation of structures and functions of trophic levels of an ecosystem.

**11. State the significance of ecological pyramid.**

In ecological pyramid, producer level forms the base and successive levels form tiers which make up the apex.

**12. What is meant by trophic level?**

The various steps through which food energy passes in an ecosystem is called trophic level.

**13. What is meant by water cycle?**

The movement of water in a cyclic manner is known as water cycle.

**14. What is meant by biogeochemical cycle?**

The cyclic flow of nutrients between the biotic and abiotic components is known as biogeochemical cycle.

**15. What is meant by ecological succession? (Nov./ Dec 2013)**

Ecological succession is the progressive replacement of one community by another till the development of stable community in a particular area. Each new community that arises often makes it harder

**16. List out the types of ecological succession.**

- 1) Primary succession
- 2) Secondary succession

**17. What is meant by biodiversity?**

The variety and variability among all groups of living organisms and the ecosystem in which they occur.

**18. State the necessity to conserve biodiversity.**

It is necessary to conserve biodiversity to preserve the genetic diversity of plants and animals.

**19. What is meant by ecosystem diversity?**

The diversity at the ecological or habitat level is known as ecosystem diversity.

**20. What is meant by hotspots of biodiversity?**

The hotspots are geographic areas which possess the high endemic species.

**21. List out the reasons to justify India as a great spot of biodiversity.**

India is one among the 12 mega diversity countries in the world. It has 89,450 animal species accounting for 7.31% of the faunal species and 47,000 plant species which accounts for 10.8% of the world floral species.

**22. State the threats to biodiversity.**

A species is said to be threatened, when its number has been reduced to a critical level.

**23. Distinguish between biodiversity and ecosystem biodiversity.**

Biodiversity	Ecosystem biodiversity
The variety and variability among all groups of living organisms.	The diversity at the ecological or habitat level.

**24. What is meant by endemism?**

The species, which are found only in a particular region are known as endemism.

**25. What is meant by endangered species?**

A species is said to be endangered, when its number has been reduced to a critical level.

**26. List out the aesthetic values of biodiversity.**

The aesthetic values of biodiversity are eco tourism (colour of butterfly, music of wild birds, colour of flowers, and colour of peacocks).

**27. State any two methods to conserve biodiversity.**

In-situ and Ex-situ are the two methods to conserve biodiversity.

**28. State the bio geographical classification of India.**

Himalayan mountain, desert, semi arid, Western Ghats and genetic plain.

**29. Is environment is static or dynamic? Mention the two major components of the environment. ( Nov/ Dec 2009)**

The environment is dynamic in nature that means it has changing surroundings. The major components of the environment are

Biotic components

Abiotic components.

**30. Explain biosphere. ( Nov/Dec 2005)**

Biosphere is defined as the part of the earth's crust, water and atmosphere that supports life. It is the ecosystem comprising the entire earth and the living organism that inhabit it.

**31. Define habitat. Give two examples. ( Nov/ Dec 2009)**

Habitat is defined as the place or environment where a plant or animal naturally lives and grows. Forest, desert, freshwater are some of the examples of habitat.

**32. What is meant by the ethical value of biodiversity? ( May/ june 2008)**

The role of biodiversity is to be a minor of our relationships with the other living species an ethical view with rights, duties and education. If humans consider species have a right to exist, they cannot cause voluntarily their extinction. Besides, biodiversity is also a part of many cultures spiritual heritage.

**33. Mention the biographic regions of India. ( May/ June 2008)**

The ten-biographic regions of India are

- Trans-Himalayas
- Himalaya
- Desert
- Semi-arid
- Western Ghats
- Deccan Peninsular
- Gangatic plain
- Coasts
- North east
- Islands

**34. Differentiate between insitu and exsitu conservation of biodiversity. ( Nov/ Dec 2012)**

In-situ conservation is defined as the conservation of genetic resources through their maintenance within natural or even human made ecosystems in which they occur. Ex-situ conservation is defined as the conservation made outside of the habitat of an ecosystem.

**35. Define consumer and classify them. ( Nov. / Dec 2011)**

Consumers are defined as the organisms that depend on others (producers- Autorophs) for their energy requirements. They are also called as heterotrophs ( Hetero= other, troph= feeder). Since the animals are not having chlorophyll, they are unable to produce their own food.

Depending upon the food habits, the consumers are divided into three types.

- a) Herbivores ( or) Primary consumers
- b) Carnivores (or) Secondary consumers
- c) Omnivores (or) Tertiary Consumers

**36. What is poaching of wild life?**

Illegal commercial hunting or fishing is called biodiversity.

**37. Name the various ecosystems.( May/ June 2010)**

- Forest ecosystem
- Desert ecosystem
- Grassland ecosystem
- Pond ecosystem.

**38. Define decomposer and give their significance. ( Nov./Dec 2012)**

The organisms which breakdown the complex compounds into simple products are called as decomposers or reducers.

Decomposers are important because they are crucial for the proper functioning of ecosystems. The green plants, which start the food chain, are unable to grow without nitrogen, potassium and phosphorous. The decomposers recycle the minerals found in dead plants and animals back into the food chain.

**39. Explain threatened and endangered species. ( Nov. / Dec. 2005)**

Threatened species are any species (including animals, plants fungi etc.) which are vulnerable to endangerment in the near future. Species that are threatened are sometimes characterized by the population dynamics measure of critical depensation, a mathematical measure of biomass related to population growth rate.

**40. Distinguish between species and genetic diversity. (Nov. / Dec 2011)**

Species diversity is the number of different species of living things available in an area. Species is a group of plants or animals that are similar and able to breed and produce viable offspring under natural conditions. This type of biodiversity is the most common level of diversity.

Genetic diversity is the variation of genes within species. They are responsible for both the similarities and the differences between organisms.

## UNIT-II

### ENVIRONMENTAL POLLUTION

#### PART – A

**1. What is meant by pollution?**

The unfavorable alteration of our surrounding is called pollution.

**2. State the types of pollutants.**

The types of pollutants are:

- 1) Biodegradable
- 2) Non-degradable

**3. What is meant by acid rain?**

Rain water with excessive acid is known as acid rain.

**4. List out the sources of air pollution.**

The sources of air pollution are:

Fossil fuel, smoking, vehicles and industries.

**5. What is meant by suspended particulate matter?**

Suspended particulate matter is a combination of variety of particles and droplets which can suspend in air for lesser or longer duration.

**6. What is meant by photochemical smog?**

The brownish smoke like appearance that is frequently formed on clear, sunny days over large cities with significant amount of automobile traffic. It is mainly due to chemical reactions among nitrogen oxides and hydrocarbon by sunlight.

**7. How does air pollution controlled?**

The air pollution can be controlled as followed:

- 1) Use only unleaded petrol.
- 2) Use petroleum products and other fuels that have low sulphur and ash content.

**8. What is meant by automobile pollution?**

The emission of particulate matters, gases like CO<sub>2</sub> during the combustion of fuels from vehicles.

**9. List out the water pollutants.**

The water pollutants are pesticides, industrial and agricultural wastes and heavy metals.

**10. What is meant by point and non-point sources?**

Point sources are discharged pollutants at specific location through pipes, ditches or Sewers into bodies of surface water.

Non point sources cannot be traced to any single site of discharge. They are usually large land areas or air sheds that pollute water by runoff, subsurface flow or deposition from the atmosphere.

**11. What is meant by bioaccumulation?**

Bioaccumulation is the accumulation of dead plants and animals in soil.

**12. What is meant by BOD and COD?**

BOD is the amount of dissolved oxygen required for biological decomposition of organic matter present in the water.

COD is the amount of oxygen required for chemical oxidation of organic matter using some oxidising agents like  $K_2Cr_2O_7$  and  $KMnO_4$ .

**13. List the sources of soil pollution.**

The sources of soil pollution are industrial wastes, urban wastes, agricultural practice and radioactive pollutants.

**14. List the causes of soil pollution.**

The causes of soil pollution are industrial wastes, urban wastes, agricultural practice and radioactive pollutants.

**15. What is meant by soil pollution?**

The contamination of soil by human and natural activities which may cause harmful effects on living beings is known as soil pollution.

**16. What is meant by aerobic and anaerobic oxidation?**

The oxidation takes place in presence of air is known as aerobic oxidation and in absence of air is known as anaerobic oxidation.

**17. State the sources of marine pollution.**

The sources of marine pollution are dumping the wastes and oil.

**18. List out the effects of noise pollution.**

The effects of noise pollution are:

- 1) It causes muscles to contract leading to nervous breakdown, tension etc.,
- 2) It affects human health, comfort and efficiency.

**19. State the control methods of thermal pollution.**

The control methods of thermal pollution are cooling towers, cooling ponds, spray ponds and artificial lakes.

**20. What is meant by thermal pollution?**

Thermal pollution is the addition of excess of undesirable heat to water that makes it harmful to man, animal or aquatic life or otherwise causes significant departures from the normal activities of aquatic communities in water.

**21. State the damages caused by nuclear radiations.**

Radioactive radiation affects the cells in the body and the function of glands and organs.

**22. State the two radio isotopes used in nuclear fission reactions.**

$U^{235}$  and Radon-222

**23. List the types of solid wastes.**

The types of solid wastes are:

- 1) Urban or Municipal wastes
- 2) Industrial wastes
- 3) Hazardous wastes

**24. What is meant by hazardous wastes?**

Hazardous wastes are the wastes that pose a substantial danger immediately or over a period of time to human, plant or animal life.

**25. List out the role of an individual in reducing pollution.**

The role of an individual in reducing pollution:

- 1) Plant more trees
- 2) Use water, energy and other resources efficiently
- 3) Reduce deforestation
- 4) Use CFC free refrigerators

**26. List out the various types of natural disasters.**

The various types of natural disasters are:

- 1) Cyclone
- 2) Earthquake
- 3) Floods
- 4) Tsunami



**27. What are the alternatives to chemical fertilizers? ( Nov. / Dec 2011)**

Some of the alternatives to chemical fertilizers are

- Biomeal
- Cottonseed meal
- Bat Guano
- Composted manure

**28. Define solid waste management.( Nov. / Dec. 2011)**

Systematic control of generation, collection, storage, transport, source separation, processing, treatment, recovery, and disposal of solid waste is defined as solid waste management.

**29. State the role and responsibility of an individual in their prevention of pollution. ( Nov / Dec. 2008)**

- To identify the causes of pollution that have global implications
- To reduce the emission of the major sources of pollution.
- To find a neutralizer for each type of pollutant.
- To ensure that anti-pollution measures are adopted by all industries.
- To identify the areas where the cause of pollution is lacking.

**30. Suggest four important sources of air pollution. ( May / June 2010)**

- Industrial effluents
- Deforestation
- Forest fires
- Automobiles

**31. Give two effects of noise pollution human being. ( May / June 2010)**

- Excessive noise leads to stressing daily life.
- Damage to heart, brain, kidney and liver.

**32. Mention four causes of floods. (Nov. / Dec 2010)**

- Heavy intense rainfall
- The melting of snow combined with rain.
- Urbanization
- Reservoir levels caused by caused by unusually large amount of rain.

**33. Name the sources and effects of marine pollution. ( May / June 2005)**

Sources	effects
Dumping of wastes	Marine birds insects plastic which causes gastro intestinal disorders
Oil	Damage to marine fauna and flora

**34. Differentiate between reuse and recycling. ( Nov. / Dec. 2007)**

<b>Reuse</b>	<b>Recycle</b>
Reuse the discarded materials in other useful purpose	It is the reprocessing of the discarded materials into useful products.

**35. Define Soil Pollution ( May / June 2008, Nov. / Dec 2010)**

Soil pollution is defined as the contamination of soil by human and natural activities which may cause harmful effects in living beings.

**36. Write any four major water pollutants. ( May / June 2006)**

- Pesticides and biocides
- Heavy metals, mercury crude oils
- Thermal pollution
- Industrial and agricultural wastes.

**37. What are landslides?**

The movement of earthing materials like coherent rock soil and debris from higher region to lower region due to gravitational pull is called landslides.

**38. What are the effects of landslides?**

- Flow deposit that blocks the roads
- Flow deposit that divert the passage
- Erosion of soil.

**39. Define – Pollution Prevention**

Pollution prevention means using processes, practices, materials, products or energy that avoid or minimize the creation of pollutants and waste or environmental disturbances, and reduce risk to human health of the environment.

**40. Define – Tsunami**

Tsunami is a large waves that are generated when the sea floor is deformed by seismic activity, vertically displacing the overlying water in the ocean.

### UNIT-III

### NATURAL RESOURCES

#### PART – A

**1. What is meant by environmental studies?**

Environmental studies are the process of educating the people for preserving quality environment.

**2. State the principles of environmental education.**

Environmental education is the application of engineering principles to the protection and enhancement of the quality of the environment and protection of public health and welfare.

**3. State the scope and importance of environmental studies.**

The scopes of environmental studies are:

- 1) To get an awareness and sensitivity to the total environment and its related problems.
- 2) To motivate the active participation in environmental production and improvement.

The importances of environmental studies are:

- 1) Environmental studies have a direct relation to the quality of life we live.
- 2) Environmental studies develop a concern and respect for the environment.

**4. State the need for public awareness for solving environmental problems.**

The need for public awareness for solving environmental problems are:

- 1) In law making process
- 2) Controlling pollution activities

**5. List out the major causes of deforestation.**

The major causes of deforestation are:

- 1) Developmental projects
- 2) Mining operations
- 3) Shifting cultivation
- 4) Forest fires

**6. List out two uses of forest resources.**

The uses of forest resources are:

- 1) Production of oxygen
- 2) Reducing global warming, soil conservation and pollution moderators.

**7. What is meant by overgrazing?**

Overgrazing is a process of eating away the forest vegetation without giving it a chance to regenerate.

**8. What is meant by mining?**

Mining is the process of extraction of metals from a mineral deposit.

**9. List out the types of mining.**

The types of mining are:

- 1) Surface mining
- 2) Underground mining

**10. List out the uses of dams.**

The uses of dams are:

- 1) To control flood and store flood water
- 2) Dams are built for generating electricity

**11. What is meant by soil erosion?**

Soil erosion is the process of removal of superficial layer of the soil from one place to another.

**12. What is upstream impact of dam construction?**

The upstream impacts of dam construction are:

- 1) Displacement of tribal people
- 2) Loss of forests, flora and fauna

**13. Enumerate the effects of mining on the environment.**

The effects of mining on the environment are:

- 1) Mining reduces the shape and size of the forest areas
- 2) Noise pollution

**14. What is meant by eutrophication?**

Eutrophication is a large proportion of N and P fertilizers used in crop fields which are washed off by the runoff water and reaches the water bodies causing over nourishment of the lakes.

**15. What is meant by water logging?**

Water logging is the land where water stands or stagnates for most of the year.

**16. What is meant by salinization?**

Salinization is the process of accumulation of salts in the soil.

**17. State any two problems due to the over exploitation of ground water.**

The over exploitation of ground water are:

- 1) Decreases the level of ground water
- 2) Ground subsidence
- 3) Earthquakes and land slides

**18. What is meant by an aquifer?**

Aquifer is a layer of highly permeable rock containing water.

**19. State the effects of ground water usage.**

The effects of ground water usage are:

- 1) Intrusion of salt water
- 2) Lowering of water table
- 3) Drying up of wells

**20. List out the types of minerals.**

The types of minerals are:

- 1) Metallic minerals
- 2) Non Metallic minerals

**21. State the uses of minerals.**

The uses of minerals are:

- 1) Development of industrial plants and machinery
- 2) Making of alloys for various purposes
- 3) Generation of energy

**22. List out any two methods of flood control.**

The methods of flood control are:

- 1) Floods can be controlled by constructing dams and reservoirs
- 2) Encroachment of flood ways should be banned

**23. State the types of drought.**

The types of drought are:

- 1) Metrological drought
- 2) Hydrological drought
- 3) Agricultural drought
- 4) Socio-economic drought

**24. What is meant by soil leaching technique?**

Soil leaching technique is the process in which materials in the soil gradually dissolve and are carried by water seeping through the soil.

**25. State the environmental effects of extracting mineral resources.**

The environmental effects of extracting mineral resources are:

- 1) Ground water contamination
- 2) Air, soil and water pollution
- 3) Devegetation and subsidence of land

**26. State the advantages and disadvantages of modern agriculture.**

The advantages of modern agriculture are:

- 1) Good crop yield
- 2) High tech techniques

The disadvantages of modern agriculture are:

- 1) Micronutrient imbalance
- 2) Water logging

**27. What is meant by under nutrition?**

Under nutrition means due to poverty the people cannot buy their basic needs and they receive less than 90% of these minimum dietary calories.

**28. Distinguish between organic and synthetic fertilizers.**

S.No	Organic fertilizers	Synthetic fertilizers
1	Natural fertilizers	Man-made fertilizers
2	Eco friendly	Non-Eco friendly

**29. State any three damages caused by fertilizers.**

The damages caused by fertilizers are:

- 1) Micronutrient imbalance
- 2) Blue baby syndrome
- 3) Eutrophication

**30. What is meant by super pest?**

Super pest are immune to all types of pesticides

**31. What is meant by Bio- magnification?**

Bio-magnification means some pesticides that are non bio-degradable and keep on concentrating in food chain.

**32. What is meant by geothermal energy?**

Geothermal energy means the energy harnessed from the high temperature present inside the earth.

**33. Distinguish between renewable and non-renewable energy resources.**

S.No	Renewable energy	Non-renewable energy
1	It is regenerated continually	Cannot be regenerated
2	In exhaustible	Exhausted

**34. Why alternative energy resources are required?**

The alternative energy resources are required;

- 1) To reduce environmental pollution
- 2) To provide more energy

**35. List out the applications of wind energy.**

The applications of wind energy are:

- 1) It does not cause air pollution.
- 2) It is very cheap.

**36. What is meant by nuclear energy?**

The energy produced from the nuclear reactions is called nuclear energy.

**37. What is meant by biogas?**

Biogas is gas obtained by fermentation of animal dung and plant wastes in the presence of water.

**38. What is meant by sustainable development?**

Sustainable development is the development of healthy environment without damaging the natural resources.

**39. What is meant by sustainable forestry?**

Sustainable forestry is the optimum use forest resources, which meet the needs of the present generations.

**40. State environmental impact statement.**

Environmental impact is an analysis of the expected effects of a development on the surrounding environment.

**41. Differentiate between deforestation and forest degradation ( Nov. / Dec 2007)**

<b>Forest degradation</b>	<b>Deforestation</b>
Slow process	Fast process
It can be recovered.	It cannot be recovered
It is the process of deterioration of forest material	It is process of destruction of forest materials.

**42. Suggest three damages caused by the use of fertilizers. ( May / June 2010)**

- It will produce toxic pesticide vapour
- It will produce new pests

**43. What is desertification? ( Nov./ Dec 2005)**

It is a progressive destruction or degradation of arid or semi arid lands to desert.

**44. What are the causes of deforestation? ( may / June 2006, 2010)**

- Mining operations
- Development projects
- Fuel requirements
- Forest fires



## UNIT – IV

### SOCIAL ISSUES AND THE ENVIRONMENT

#### PART – A

**1. What is meant by sustainable development?**

Sustainable development is defined as, meeting the needs of the present without compromising the ability of future generations to meet their own needs.

**2. State Earth Summit - 1992.**

Earth summit states that “a new and equitable global partnership through the creation of new levels of cooperation among states”.

**3. What is meant by 3R principle?**

The approach of reduce, reuse and recycle is called as 3R principle. It insists optimum use of natural resources, reusing instead of throwing it on the waste land or water and recycling the material into further products.

**4. List out the objectives of rain water harvesting.**

The objectives of rain water harvesting

- 1) To meet the increasing demands of water.
- 2) To raise the water table by recharging the ground water.

**5. . What is meant by rain water harvesting?**

Rain water harvesting is a technique of capturing and storing of rain water for further utilization.

**7. What is meant by watershed?**

Water shed is defined as the land area from which water drains under the influence of gravity into a stream, lake, reservoir or other body of surface water.

**8. List out the principles of watershed management.**

The principles of watershed management are:

- 1) To minimize the risk of flood, droughts and land slide.
- 2) To promote social forestry and horticultural activity on all suitable areas of land.

**8. What is meant by acid rain?**

Acid rain means the presence of excessive acids in rain water.

**9. State any two methods to control acid rain.**

The control methods of rain water are

- 1) Emission of SO<sub>2</sub> and NO<sub>2</sub> from industries should be reduced by using pollution control equipments.
- 2) Liming of lakes and soils should be done to correct the adverse effect of acid rain.

**10. What is meant by acid deposition?**

The presence of pollutants like NO<sub>2</sub> and SO<sub>2</sub> gases in atmosphere will lowers the pH of rain water; this will increase the acidity of rain water. This type of precipitation of water is called as acid deposition.

**11. List out the effects of global warming.**

The effects of global warming are:

- 1) Sea level increases
- 2) Water resources decreases
- 3) Drought nature increases.

**12. State the effects of ozone layer depletion.**

The effects of ozone layer depletion are:

- 1) UV rays destroy the melamine pigments in human skin.
- 2) It also affects aquatic forms.
- 3) It degrades paints, plastics and other polymeric materials.

**13. What is meant by green house effect?**

The green house effect may be defined as, “ the progressive warming up of the earth’s surface due to blanketing effect of manmade CO<sub>2</sub> in the atmosphere”.

**14. What are green house gases?**

The green house gases are the gaseous pollutants which are responsible for green house effect. The examples of green house gases are CO<sub>2</sub> , CH<sub>4</sub> , nitrous oxide (N<sub>2</sub>O) and chloro fluoro carbons (CFCs).

**15. List out few practices to reduce global warming.**

The global warming can be reduced by

- 1) Planting more trees
- 2) Utilizing renewable resources such as wind, solar and hydro power
- 3) Shifting from coal to natural gas

**16. How does climate change occur?**

The climate changes occur by

- 1) Presence of green house gases in the atmosphere increases the global temperature.
- 2) Depletion of ozone layer also increases the global temperature.

**17. List out the objectives of air pollution act.**

The objectives of air pollution act are

- 1) To prevent, control and abatement of air pollution.
- 2) To maintain the quality of water.
- 3) To establish a board for the prevention and control of air pollution.

**18. What is meant by agro forestry?**

In high rainfall areas, woody trees are grown in between crops to reduce the runoff and loss of nutrients of soil. This process of growing trees is called as agro forestry.

**19. What is meant by nuclear holocaust?**

Nuclear holocaust means destruction of biodiversity by nuclear equipments and nuclear bombs. Usually, these kinds of destruction are happened in a nuclear war.

**20. What is meant by environmental ethics?**

Environmental ethics refers to the issues, principles and guidelines relating to human interactions with their environment.

**21. Distinguish between rehabilitation and resettlement of people.**

Resettlement is simple relocation or displacement of human population. This process does not focus on their future welfare.

Rehabilitation involves making the system to work again by allowing the systems to function naturally. It includes replacing the lost economic assets, repairing damaged infrastructures, safeguarding employment and providing safe land for building.

**22. What is wild life protection act?**

Wild life protection act is aimed to protect and preserve wildlife, which was amended in 1983, 1986, and 1991.

**23. What are the urban problems related to energy? ( May / June 2013)**

- Life style of urbanites has great contribution in present energy crisis because they consume high energy.
- There is tremendous gap between energy generation and consumption of energy
- Energy crisis due to the high population demand is one of the important problem today.

**24. Define – Sustainable Development ( Nov. / Dec 2010)**

It is defined as development that meets the needs of the present without compromising ability of future generation to meet their own needs.

**25. What are the green house gases and their percentages?**

The major green house gases are

- Carbon dioxide ( 60%)
- Chloro fluoro carbon ( 22%)
- Methane ( 12 %)
- Nitrous oxide ( 6%)

**26. What are the causes and effects of ozone layer depletion? ( May / June 2008)**

- UV rays destroys the melamine pigment in human skin
- Increases the temperature of the earth
- It also affects the aquatic forms.

**27. What are the advantages of rain water harvesting? ( May / June 2008)**

- Increasing the availability of water from well
- Rise in ground water levels
- Minimizing the soil erosion and flood hazards
- Future generation is assured of water
- Reduction in the use of current for pumping water.

**28. Mention any four techniques of water conservation?**

- Rainwater harvesting.
- Watershed management
- Reuse of industrial waste water
- Better agricultural practices.

**29. Define – Environmental Ethics**

Environmental Ethics is the branch of ethics which analyzes about human use of earth's limited resources. A growing trend has been to combine the study of both ecology and economics to help provide a basis for sustainable decisions on environmental use.

**30. List the four objectives for forest conservation act. ( Nov. / Dec 2013)**

- That any reserved forest or any portion thereof shall cease to be reserved.
- That any forest land or any portion thereof may be used for any non-forest purpose
- That any forest land or any portion thereof may be assigned by eay of lease or otherwise to any private person or to any authority corporation, agency or any other organization not owned, managed or controlled by government
- That any forest land or any portion thereof may be cleared of trees which have grown naturally in that land or portion for the purpose of using it for afforestation.

**31. What is disaster management? ( Nov. / Dec. 2011)**

Disaster management can be defined as the organization and management of resources and responsibilities for dealing with all humanitarian aspects of emergencies, in particular preparedness, response and recovery in order to lessen the impact of disasters.

**32. What is cyclone? ( Nov. / Dec. 2013)**

Spiral movement of wind towards a low pressure centre is called as cyclone. Storms associated with low pressure in a cyclone is anti-clockwise in the northern hemisphere and clockwise in the southern hemisphere.

**33. What is Tsunami? ( Nov. / Dec. 2009)**

A tsunami is a wave train or series of waves generated in a body of water by an impulsive disturbance that vertically displaces the water.

**34. What are the objectives of the wild life protection act of 1972. ( Nov. / Dec. 2012)**

- To maintain essential ecological processes and life supporting systems.
- To preserve the biodiversity.
- To ensure a continuous use of species. i.e protection and conservation of wild life.

**35. What do you mean by eco-labeling?**

Eco-labeling is only a kind of environmental labeling that informs the consumers about the relative environmental quality of the product. There are many different eco labels being used around the world.

**36. Mention the objectives of eco-labeling?**

- To protect the environment
- To encourage environmentally sound innovation and leadership
- To build consumer awareness of environmental issues.

**37. Define – Hazardous Waste**

Hazardous Waste is defined as any substance or preparation which, by reason of its chemical or physical physio-chemical properties or handling, is liable to cause harm to human beings, other living creatures, plants micro-organisms, property or the environment.

**UNIT – V**  
**HUMAN POPULATION AND THE ENVIRONMENT**  
**PART – A**

**1. What is meant by population explosion?**

The enormous increase in population, due to low death rate and high birth rate, is termed as population explosion.

**2. List out the factors affecting population size.**

The factors affecting population size

- 1) Birth rate or natality
- 2) Death rate or mortality
- 3) Immigration
- 4) Emigration.

**3. What is meant by population stabilization?**

The population stabilization ratio is derived by dividing crude birth rate by crude death rate.

**4. List out any two important views of population growth.**

The important views of population growth are

- 1) Increased demands for food and natural resources.
- 2) Inadequate housing and health services.

**5. What is meant by doubling time?**

Doubling time is the required for a population to double its size at a constant annual rate.

It is calculated as follows

$T_d$  (Doubling time) =  $70/r$ ; where  $r$  = annual growth rate

**6. What is meant by total fertility rate?**

The average number of children delivered by a woman in her life time.

The TFR value varies from 2 in developed countries to 4.7 in developing countries.

**7. List out the objectives of family welfare program.**

The objectives of family welfare program are

- 1) Achieve hundred percent registrations of births, deaths, marriage and pregnancy.
- 2) Encourage late marriages and later child bearing.

**8. What is meant by NIMBY syndrome?**

NIMBY means “NOT IN MY BACK YARD”, which describes the opposition of residents to the nearby location of something they consider undesirable, even if it is clearly a benefit for many.

**9. What is meant by value education?**

Value education is an instrument used to analyse our behavior and provide proper direction to our youths. It teaches them the distinction between right and wrong.

**10. State the role of primary health care against AIDS.**

The role of primary health care against AIDS

- 1) Prevention of blood borne HIV transmission.
- 2) AIDS awareness programmes should be encouraged.

**11. What is meant by remote sensing?**

Remote sensing refers to any method which can be used to gather information about an object without actually coming in contact with it.

**12. What are the factors affecting population growth?**

The four important factors affecting population growth of an area are

- Births(B)
- Deaths(D)
- Immigration(I)
- Emigration(E)

**13. What is meant by Population Growth Rate?**

Population Growth Rate(PGR) is defined as the increase in a country's population during a period of time, usually one year, expressed as a percentage of the population at the start of that period. It reflects the number of births and deaths during the period and the number of people migrating to and from a country.

**14. What is population explosion and population density? ( Nov. / Dec 2011)**

A rapid increase in the size of a population caused by a sudden decline in infant mortality or an increase in life expectancy is defined as population explosion. The number of individuals of the population per unit area is defined as population density.

**15. Define – Immigration and Emigration (Nov. / Dec 2009)**

Immigration: Incoming people from another country or region to a particular area.

Emigration: Outgoing of people from particular area to another country or region.

**16. Define –Population Pyramid**

The population pyramid (or) age pyramid is a graph showing the make-up of a population by sex and age. It is also used to determine the overall age distribution of a population. An indication of the reproductive capabilities and likelihood of the communication of a species.

**17. Define – Health**

Health is considered as a quality of life that enables the individual to live most and serve best. As per WHO, Health is a state of complete physical, mental and social well-being, and not merely the absence of disease or infirmity.

**18. Define – Demography**

It refers to the science of dealing with the study of size, composition and territorial distribution of population, it includes study of fertility, morality, migration and social mobility.

**19. Name the fundamental rights of an Indian citizen.**

- Right to equality
- Right to freedom of speech and activity
- Right against Exploitation
- Right to freedom of Religion
- Right to constitutional Remedies
- Cultural and Educational rights

**20. What are the objectives of public awareness?**

- Need to give awareness about severe resource depletion due to over population
- To create awareness about unemployment problems.