B.TECH.

SECOND SEMESTER EXAMINATION 2009-10

ENVIRONMENT & ECOLOGY

Time : 2 Hours *Total Marks : 50*

Note: **The question paper contains three sections, Section A, Section B and Section C with the weightage of 10, 15 and 25 marks respectively. Follow the instructions as given in each section.**

SECTION A

Q.1. Fill in the following blanks with suitable words:

(a) Troposphere is located _____ Stratosphere.

Ans. Lower (Under)

(b) The term 'Ecology' was introduced by _____.

Ans. Ernst Haeckel / Reiter

(c) The disease caused by excess of fluoride in water is known as _____.

Ans. Fluorosis

(d) Herbivores are _____ consumers.

Ans. Primary

(e) _____ is related to Global warming.

Ans. CO_2 /Green house/Climate Change

(f) The best known substance responsible for ozone layer depletion_____.

Ans. CFC

Indicate True or False for the following statements:

(g) Mosquito is an example of Bacteria.

(True/False)

Ans. False

(h) Rain water does not create any land pollution. **(True/False)**

Ans. FALSE /TRUE (Both are right)

(i) Only legislation is not sufficient for the control of environmental pollution.

(True/False)

Ans. TRUE

Tick one correct answer among the following given choices:

(j) Biogas predominantly contains:

(i) CH_4 **(ii)** NH_3

(iii) SO_2 **(iv) Ethane**

Ans. (i) CH_4

SECTION B

Q.2. Attempt any three parts. All parts carry equal marks: **(5×3=15)**

(a) How would environmental awareness help to protect our environment?

Ans. Need of Public Awareness About Environment: Different national, international conference, Seminar on environment indicates that only concerned authorities are not sufficient to solve the environmental problems and therefore local public have to participate. Ultimately they are the cause for all types of environmental problems.

If it is acknowledged by every person that how much environmental pollution is created by individual and how it will affect our biosphere, then definitely for the sake of our clean biosphere, he will take care of his activities therefore, the objective of public awareness is to consider himself as the part of environment and create the following things:

(i) knowledge of environmental principles

(ii) Skill development

(iii) Motivation & participate for environmental protection

Sustainable consumption of natural resources.

(b) Briefly discuss the various energy resources.

Ans. Energy resources are those raw materials of nature which gives the energy and it can be classified in number of ways such as:

1. On the basis of their availability:

1. **Primary energy Resources:** These are obtained directly from the environment for examples

   (i) Fossil fuels such as coal, crude oil, natural gas etc.

2. **Secondary energy resources:** These do not exist in nature rather they are derived from primary energy resources. The examples are.....

   (i) Petrol, diesel, kerosene oil etc.which are derived from crude oil.

   (ii) Compressed natural gas (CNG), liquified petroleum gas (LPG) which are derived from natural gas.

2. On the basis of use:

(I) **Conventional Energy resources.** Those which are used from a long time. For examples are fossil fuel coal, petrol, wood etc.

(II) **Non Conventional Energy resources:** Those resources which are used recently to meet the challenge of energy crisis. For examples, solar energy, Wind energy, geothermal energy, Ocean energy.

3. On the basis of renewability:

(I) **Renewable resource:** It can be generated again and again and are inexhaustible in nature. e.g. Sun light, wind energy, tidal energy, Hydropower energy, Geo thermal energy etc. **Solar energy** is one of the best examples to show the importance of renewable energy resource in it. Energy is produced by thermal conversion (solar light is converted into heat) and in photovoltaic conversion P & N type of semiconductors are used. It does not produce any pollutants while it is completely dependent on weather condition.

(II) **Non Renewable resource:** It can't be generated again and again and are exhaustible in nature e.g. fossil fuel. These fossil fuels are the product of billion years due to excess temperature and pressure. All under cover organic matter is converted in to unburned condition and forms coal and liquid fuel. It is an economical source of energy but produces a number of air pollutants.

(c) What is solid waste? Discuss its sources and effects.

Ans. Solid waste:

- All solid and semisolid wastes, arising from human and animal activities and which are discarded as useless or unwanted are called solid wastes or refuse. This definition excludes human excreta and sullage (liquid waste from kitchen and bathroom).
- **Rubbish:** It includes combustible (e.g. paper, card board , textile , plastic rubber, wood etc.) and non combustible (glass, crokery, metals, construction wastes etc.) solid waste.
- **Garbage:** It includes putrescible that can rot organic wastes, e.g. residue of fruits, vegetable and animals which are generally produced in cooking and eating of foods.

Types and Sources: There are three categories of soil wastes:

- **Agricultural wastes:** These wastes contain various unused edible and non-edible parts of plant's product. e.g. Rice husk, saw dust etc.

- **Municipal Wastes**: These wastes arise from residential areas (household activities, streets) commercial areas (hostels, markets, institutions) and community areas (street, parks and play grounds).
- **Industrial Wastes**: These wastes arise from industrial activities and include rubbish ashes, construction wastes, toxic wastes etc.
- **Hazardous wastes**: These are highly harmful wastes arising from hospitals, industries, nuclear plants, research institutions, laboratories and include biological wastes, toxic chemical radio active substances, explosives and flammable wastes.

Cause of increasing solid waste generation:

- Over population and thereby increasing consumption and waste generation.
- Technological advancement leading to cheap production of commodities.
- Rapid urbanization and increasing availability of consumer products.
- Growing trend of "non-returnable packaging " and use the throw culture

Effects of solid waste pollution:

- Pathogens of different diseases arise from the waste and spread diseases
- Solid waste may choke drains and pits which result in water logging and breeding of mosquitoes
- Stray animal(dogs, cattle) feed on the garbage spread it and also fall ill
- Pollutants from garbage dump contaminate ground water and surface water.
- Garbage dumps often destroy aesthetics value of the locality.

Fumes arising from burning of wastes pollute the air and foul smell due to decomposition of organic wastes create are unpleasant and create health problems.

(d) What is acid raln? What are the causes and effects of acid rain?

Ans. ACID RAIN: Presence of SO_2, NO_2 etc in the atmosphere when dissolved in natural rain water came the formation of nitrous acid (HNO_2) , nitric acid (HNO_3) , sulphurous acid (H_2SO_3) and sulphuric acid (H_2SO_4). Therefore above mentioned secondary air pollutant decrease the pH of natural rain water up to less than 5.6. Such type of precipitation is referred as acid rain.

Various Cause of Acid rain:

Natural Cause:

1. Volcanic eruption produces excess amount of NOx which forms atmospheric nitric acid and responsible for acid rain.
2. Oceans are also produces SOx that help to increase the acid rain.

Anthropogenic cause:

1. Burning of fossil fuel.
2. Industrial use of S or N in sulphuric acid nitric acid and in explosive industries in any form that comes from the stack gasses
3. Excessive vehicular including Air traffic where liquid nitrogen is used as fuel.
4. Thermal power plants where coal that high S content is burned.

Effects If Acid Rain On Environment:

(i) Tree leaves and plantation are damaged

(ii) The rate of corrosion of materials accelerates.

(iii) Quality of marbles, building and structure is affected e.g. degradation of Taj Mahal

(iv) Due to acidity in lakes, ponds, rivers etc The green algae and many forms of bacteria are killed; hence aquatic echo system is substantially affected.

(v) Soil fertility is affected due to killing of earthworms, leaching out of potassium from the soil.

(e) Which are the Government /Department responsible for the protection of the environment? Write brief.

Ans. Environment protection – Role of Government:

Introduction: Environmental problems affect everyone, hence everyone needs to conserve or protect the environment. For the welfare of people, government of the country/ state generally play the central role for implementing different programs related to environmental protection.

Major roles of Government: Major roles of Government for environmental protection includes (for example in India)

- Making environmental laws/ policies and implementing them.
- Conversing forests, wildlife and the different natural resources through Institutional framework.
- Monitoring pollution levels across the country through pollution control boards.
- Conducting large scale pollution control programs (e.g., Ganga action, Plan, Yamuna action plane).
- Running municipality, sewage system, solid waste dumping etc. for disposal urban waste
- Promoting environmental education at all levels (at schools, colleges and universities) and promoting research and development, in environmental field
- Creating awareness among public for their participation in environmental protection.

SECTION C

Attempt any two parts from each question. All questions are compulsory.

Q.3(a) Discuss in brief four segments of environment?

Ans. Environment Segment: It describes entire segments of nature which includes each and every things of our surrounding therefore, in aggregate form, it is sum of all living and non livings things of our earth and it can also be defined as "sum of all biotic and abiotic facts which effect existence growth and development of every living of any our planet earth.

(I) Segments

Atmosphere: It is outer gaseous part of earth which contains specific composite of gases at different attitude. It is further sub divided into troposphere, stratosphere, mesosphere, exosphere. Troposphere is the lowest and most turbulent zone containing nitrogen in excess.

(II) Hydrosphere: This segment cover 2/3 part of our planet in a form of water. Total available water is estimated as $1.36 * 10^9$ cubic KM out of this about 97% is contained in ocean and seas, about 2 % is locked in glacier and polar ice, and rest about 1% in lakes, streams, rivers and underground resources. Sea ocean water is salty and is not useful for human consumption effectively less than 1% water is only available as fresh water which is suitable for human consumption.

(iii) Lithosphere: It is the top crust of the earth the ocean basin and continents lie on it. The crust thickness varies widely, being thickest in continental region (average thickness about 10-12 KM) the upper most layer of soil on earth is crust, next middle layer is called mantle and inner layer is known as core region. Crust is solid in state and the most important region of lithosphere because the major biological activity is occurring in this region.

(IV) Biosphere: It is the common region of the environment where the entire spheres (atmosphere, hydrosphere and lithosphere) overlap to each other. In this region, the possibility of life is maximum.

(b) Define the concept of ecosystem.

Ans. Ecosystem: The term ecosystem is defined by A.G.Tansley who stated that ecosystem is the interaction of living things with living and non living surroundings of environment. It is the smallest ecological unit of biosphere which provides all essential requirement to the certain groups of community. Therefore, it is a cluster of natural resources and certain group of organism. The living organism interacted with the abiotic and biotic surrounding of ecosystem and exchange the food and energy.

The main components of ecosystem can be divided into following steps:

(a) Biotic Components (b) Abiotic

(a) Biotic Components: It contains all the living organism like plants, animals and microorganism presents in an ecosystem. The organism have different nutritional behaviour and are accordingly known as producer, consumer.

(i) Producer or Autotrophs- are organism that can form their food themselves. e.g. green plants, photosynthetic bacteria. Producer convert solar energy into chemical energy with the help of inorganic substances such as water and CO_2 and form organic substance due to which O_2 is release.

(ii) Consumers or Hetrotrophs- are the organism that can not produce their food themselves. On the basis of feeding behaviour, they can be divided into foliowing types:

(a) Hervivores (herb eater)- Mice, rubbits, deer

(b) Carnivores(Flesh eater)- Foxes, fzers, snakes

(c) Omnivores(Herbs & Flesh eater)- ears,Turtles

(iii) **Decomposer:** Decomposers are also called saprotroph and depend upon dead organic matter eg. Aspergillus fungus

(b) A Biotic Components: These contain the nonliving substance and can be categorized in to following:

(i) Inorganic components - Water,Hydrogen, ecosystem,

(ii) Organic Component - Preten, fat, carbohydrates

(iii) Physical Components - Sunlight, humidity,wind,rainful,temp.

(c) What is sustainable development? Discuss the concept of sustainable development.

Ans. Sustainable development is defined as meeting the needs of the present without compromising the ability of future generation to meet then own needs. It has been accepted in the literature since the Brunt land Commission report was published in 1987. It influenced on national level and international level about biodiversity and protection of plants and animals and community based activity. The Rio Summit emphasized on economic growth and poverty by adapting sustainable development.

The necessary condition or concepts for adapting the sustainable development are:

(a) Social equity: There should be an equilibrium condition in the society among the same

generation within and between nation (Intra-generation equity) and between two different generations.

(b) **Economical Equity:** It is based on the technology development or sharing of technologies. In developing countries, the technology should address to the problem of drought, varieties of uncertain climates, vaccines for infections disease, clean fuel for domestic and industrial use which is still a big challenge. This type of technological development will support the economic growth of the poor countries and help in reducing the wealth gap.

(c) **Ecological Security:** It concentrated on the protection of biodiversity, decrease the rate of soil erosion and increase the forest cover area that brings the ecological security.

Q.4. (a) Name and explain the various steps involved in Nitrogen cycle.

Ans. Nitrogen cycle:

Step1:Nitrogen-fixation:- It is the process in which atmospheric nitrogen get converted into nitrogen compound and again these compound get converted into atmospheric nitrogen by various agents, the following steps are present.

Atmosphere: It is the atmospheric nitrogen (N_2) is oxidized at high temperatures (by lightning or by internal combustion in engines) to make nitrite (NO_2). This can combine with water to form nitric acid (H_2NO_3), which is deposited on earth through rainfall.

Biological: It is done by bacteria (Rizobium leguminisorum) which can convert N_2 into ammonia (NH_3) if an energy source is present. Some get this energy directly by absorbing sunlight (e.g. blue-green algae) or by living cell from the roots of legumes plants from here these microbes get food.

Step 2: Conversion of Ammonia: As amino acids and nucleic acids require N in the form of Ammonia. This is done through Nitrate reductase enzymes.

Step 3: Biological Use: Ammonia is incorporated into proteins, nucleic acids and helps to support the plants and organisms.

Step 4: When organism dies, ammonia is released back into the biosphere through the process of Ammonification, in which presence of water in proteins helps to make carbon dioxide and ammonia. This process happens during digestion, and is also done by bacterial and fungal decomposers.

Step 5: If ammonia released through oxygen rich (aerobic) soil, other bacteria can convert it into nitrite or nitrate through the process of Nitrification:

$NH_4^+ + 2O_2 = NO_3^- + H_2O + 2H.$

This behavior of N is responsible for the formation of leachate which is highly acidic in nature and capable to dissolve the metal present in soil and mixed in to ground water.

Step 6: If soils remain anaerobic, another group of microbes convert nitrogen and send back to atmosphere through the process of denitrification. In this process, bacteria use nitrate as an oxygen source for respiration.

$C_6H_{12}O_6 + 4NO_3- = 6CO_2 + 6H_2O + 2N_2$

(b) Give a brief account of non-renewable energy resources.

Ans. Non-Renewable Resurces: A non-renewable resource is a natural resource which cannot be produced, regenerated, or reused again. These resources often exist in a fixed amount,

or are consumed much faster than nature can recreate them. These natural resources are polluting in nature. E.g Coal, crude oil etc.

Formation: During tectonic movement, all the organic matter were covered under the earth and create high pressure and temperature. The result was the formation of unburned organic matter having high caloritic value which is usually called as coal.

Type:

Anthracite Coal: This coal contains 90–95% C- content and have small amount of moisture and Sulphur. Hence non polluting in nature.

Bituminous Coal: This coal contains 75–80% C- content and have higher amount of moisture and Sulphur. Hence polluting in nature.

Lignite Coal: This coal contains 60–65% C- content and have highest amount of moisture and Sulphur. Hence it is excessive polluting in nature.

Peat: This is powdered coal and during burning excessive smoke.

(c) Briefly discuss the flouride problem in drinking water.

Ans. Fluoride problem: The content of fluoride in drinking water and tooth paste attracts public attention nowadays. On the hand, fluoride is added to many drinking waters in small quantities to prevent dental caries. On the other hand, fluoride is a carcinogen, a bone seeker and is linked to hip fractures and brittle bones. Fluoride is an essential substance in human body that not only helps to reduce the tooth decay but also protect human from various bone disease. Fluoride comes in ground water through various natural sources like presence of various rocks that contains Flurospar and other ores while various medicines, toothpaste and fertilizer industries push it in the human body. The permissible range of fluoride in ground water varies from 1-1.5. There are several district of Rajasthan, M.P, Mirjapur (reinkut), where human are force to drink the water having 24 ppm fluoride.

Effect:

Dental fluorosis: It includes discoloration, Black coloration, brown stain of tooth.

Skeletal fluorosis: It includes heal pain, joint pain etc.

Gastro intestinal effects: It includes formation of HF by the combination of HCl and F in stomach that form intestinal ulcer.

Q.5. (a) What is Pollution? Discuss the natural and man made (synthetic) pollutant that cause air pollution.

Ans. Polution: Presence of any substance in any form in such a concentration that will harm the receptor or Pollution can be defined as an undesirable change in the physical, chemical or biological characteristics of air, water or land that may or will harmfully affect the receptor like human being, plants, animal building and environment etc. These pollutants are divided into following categories.

These pollutant when comes from natural sources, these are called natural pollutants and if comes through man made sources then it will be called as man made sources. Or the source can be defined as point sources and diffused sources when the pathways and location of the pollutant are known then it will be called as point sources and if the pathways and location of the pollutants are not known, it is called as diffused sources.

Natural Pollutants: Those which are produced from natural sources (Forest Fire, Dust, Volcanic eruption etc.)

Man made pollutants (Synthetic Pollution): Those which are produced from anthropogenic sources (Industries, vehicles) that may produce volatile organic chemical, Pesticides, herbicides, poly chlorinated biphenyl's, PAN etc.

(b) How can the solid waste be managed?

Ans. Solid Waste be Managed: - Solid waste is those solids which are discarded and rendered useless by human beings. It can be defined as the valuable raw material located at wrong place. Some of the waste can be recovered and reprocesses before the waste can be disposed off, it must be collected efficiently through recycling process. These activities i.e. collection, disposal and recovery are known as solid work management. It occurs in following steps.

1. **Reuse :** Do not throw away the soft drink cans or the bottles. Cover them with home made paper or paint on them and use them as pencil stands.
2. **Recycle :** Use shopping bags made of cloth or jute, which can be used over and over again.
3. **Reduce :** Reduce the generation of unnecessary waste.

Disposal of solid waste:

Disposal : Different methods for the disposal of solid waste are open dumps. Landfills, sanitary landfills, composting and incineration plants.

Open dumps: Open dumping of solid waste is done in low lying areas and outskirts of the towns and cities. Open dumps refer to uncovered areas that are used to dump solid waste of all kinds.

Land fills: Landfills are generally located in urban areas where a large amount of waste is generated and has to be damped in a common place.

Sanitary landfills : Sanitary land filling involves the disposal of municipal wastes on or in the upper layers of the earth's mantle.

Incineration : The process of burning waste in large furnaces is known as incineration. In this process wastes like plastics, paper, rubber, wood scrap etc. are subjected to burning at very high temperatures (1000 °C) so that no dioxins and furans will formed.

Composting : It is the natural process of decomposition of organic waste that yields manures or compost which is very rich in nutrients composting. It is a biological process in which micro-organics consumed degradable organic waste produced by humans.

(c) Enumerate with examples the major sources of water pollution.

Ans. Water pollution: It can be defined as an undesirable change in the physical, chemical or biological characteristics of water that may or will harmfully affect the receptor like human being, plants, animal building and environment etc.

The sources of water pollution can be divided in following categories normally point sources and differed sources.

1. Point sources: Those Sources whose location can be identified as single point e.g. Sewage and industrial effluent or those sources which can be readily identified at a single location are called point sources ex. Industrial waste municipal sewage.

2. Diffused or Non point sources: Those sources that are scattered over a large area or that can not be identified as single points. E.g. Run-off from agricultural land, forests, construction etc.

The other sources are

(i) **Sewage and other domestic waste :** Sewage is the water borne waste which includes human excreta, paper, cloth, soap, detergents etc. These are a major proportion of the pollutants entering in to the water. These are uncontrolled dumping of wastes of rural areas. Towns and cities into ponds, lakes, streams or rivers. Due to this, the self-purifying ability of water is lost and water becomes unfit for drinking and other domestic uses.

(ii) **Industrial effluents :** A wide variety of both inorganic and organic pollutants are present in effluents from breweries, tanneries, dying textiles, paper and pulp mills, steel industries, mining operations etc. The pollutants include oils, greases, plasticizers, metallic wastes, suspended solids, phenols, toxins, acids, salts, dyes, DDT etc.

(iii) **Agricultural practices :** These include chiefly the chemicals used as fertilizers and the pesticides used in pest control. These chemicals along with water moved on the land and finally reached into the rivers, lakes, streams, where they disturb the natural ecosystem.

(a) **Natural source** like (death and decay of plants and animals) soil, erosion , agricultural run-off etc.

(b) **Man made sources** like mining's (Acid mines drainage), municipal sewage, industrial effluents accidental spillage etc.

Q.6. (a) What are the major impacts of enhanced global warming?

Ans. The enhanced global warming word reveals the negative aspect of global warming while global warming has a significance role in life at earth by making earth climate warm but excessive emission of CO_2 has increased not only the earth atmospheric temperature but also affects various other climatic and natural processes. It affects the human health and agricultural activity e.g. CO_2 increase the growth of plants due to plants uptake the nutrients rapidly, which get reduced in soil and increased the barren land. Major impacts are listed below.

- **Global temperature increases:** The temperature of earth atmosphere increases annual and it ranges from 0.3–0.5 °C.
- Changes in the amount and pattern of precipitation and rise in sea level
- Global warming would cause the polar ice caps and mountain glaciers to melt rapidly and it results in rise the level of coastal water.
- The rise in global temperature would produce new pattern and extremes of draught and rain fall.
- Increase in the severity of storms
- The dislocation and possible extinction of certain biological species.

(b) What are the agents responsible for Ozone depletion?

Ans. The agents which are responsible for the Ozone Layer depletion are described below:

I. It is destroyed by the free radicals in the form of catalysts Ex. Hydroxyl ion (OH), Nitric Oxide (NO) Atomic Chlorine, Bromine and CFCs.

2. The direct emission of NOx occurs from the movement of supersonic plane in tropopause which reacts with Ozone and reduces it.
3. N_2O is produced due to increase use of nitrogenous fertilizer which not only affects the soil quality but also increase the nitrate content in ground water.
4. The Ozone also reduced by the consumption of the products that have CFCs, it produces Cl radicals which may destroy thousand molecules of ozone in Stratosphere. The CFCs is consumed in refrigeration aerosols propellant.
5. Ozone layer is also depleted by the consumptions of Halozens which is widely used in Fire extinguisher.
6. CFC-12 would photolysis and formed Cl and ClO radicals that leads to ozone depletion.

(c) How human activities are likely to change the global climate?

Ans. The following listed human activity plays an important role in global climate change. These are

Deforestation

Industrialization

Urbanization

Increase vehicular use

Diversion of streams/canals

Construction of Dams etc

These activities produce various pollutants that affect the global climate changes are listed below

1. CO_2 : It is produced by fossil fuel combustion, Deforestation.
2. CH_4 : It is produced by wetland, anaerobic decomposition of organic waste material.
3. N_2O : It is produced by natural soils, fertilizers, fossil fuel combustion
4. O_3 : It is produced by tropospheric photochemical reactions , Atmospheric transportation
5. CFC's: It is produced by refrigerator, air conditioner, aerosols propellant, formation of foams
6. CCl_4 : It is produced by intermediate production of CFC-11, CFC-12 solvents.

Climate Change: Climate change reflects both, the cooling and warming trends. The trend changes due to changes in temperature, moisture and motion etc.

Following records are the indicator of changes in global climate over the post 1500 years.

1. The surface air temperature has increased up to ± 0.6°C on a decadal scale.
2. A warning trend was apparent from the year 1750 to 1940.
3. A cooling effect was observed from 1940 to 1960.
4. A global mean warning of 0.45 ± 0.15 °C has been recorded over the last about 140 years.
5. The year 1990 was the warmest year on earth recorded till date.

Q.7. (a) What is animal husbandry? Explain the environmental concerns of animal husbandry.

Ans. Animal Husbandry: Animal husbandry is a science that deals with the studies of domestic/pet animals: their types, behavior, up keeping methodologies. It also deals with their usefulness for the mankind, environment, consumable products and byproducts produced by them. The subject of animal husbandry can be sub classified into following major areas.

1. Animal petting that deals with their utilization, reproduction and vivid uses. In it new breed have been developed so that above said purpose can be fulfilled.
2. **Vetenary Science:** That deals with the medical parts of animals. In it the new medicines & vaccines have been developed to protect the animal from various bacterial and viral disease.

Diary Technology: That deals with the milk products produced such as milk, curd, cheese, butter, ghee, paneer etc.

(b) Discuss the Role of NGO's in environmental protections.

Ans. Role of NGO's in Environment Protection: NGO is a legally constituted body created by private organizations or people with no participation or the presentation of any Government. The number of international NGO, is estimated to be 40,000. India has some where between 1-2 million.

List of some International NG'O s	National NGOs
- WWF	- CSE
- Greenpeace	- IES
- The scerra club Foundation	- SRIJAN
- The Envt. Foundation for Africa	- PRADAN

NGO works in env. protection by following activities. These are

Public Awareness, Community Participation, Public interest litigation, Dialog with govt authorities

The above activities help to achieve the goals which are the prime target of NGO. These objective's of NGO's are

- Awareness
- Knowledge
- Participation
- Nature conservation
- Waste utilization and eco development.
- Pollution control
- As forest action
- Rural development
- wild life conservation

(c) How women's education helps in environmental reservation?

Ans. Women Education: Hysterically, women have been discriminated due to their physical vulnerability, cultural reasons, lack of education and male domination in most of the societies. Certain facts supporting this are :

1. In India sati system, dowry system and different customs and religious codes have restricted the liberty of women since long.

2. Due to higher preference towards male child, female foeticide (killing of female embryo) has been reported from many regions of India. This resulted in lower proportion of woman in most of the states.
3. As per 2001 census of India, sex ratio of India is 934 women per 1000 men. Haryana has the lowest ratio (861 women / 1000 men) and kerala is highest ratio (1058 women/ 1000 men).
4. Woman's participation in education is quite low. As per 2001 census of India, female literacy is 54% while male literacy is 75% (total literacy rate of India is 65% including 80% urban and 59% rural).
5. Women's participation in different profession has been generally less than that of men. However, the situation is improving day by day.