# UNIT 1: INTRODUCTION TO ENVIRONMENTAL STUDIES Origin of Earth & Components of Environment

**1.The earth was born ......................**

(A) **2 billion years ago** (B) 4.5 billion years ago

(C) 10,000 years ago (D) None of these

**2. The first living form (blue-green algae) appeared on earth ..................**

(A) **3.5 billion years ago** (B) 6.0 billion years ago

(C) 5.0 billion years ago (D) 5.0 billion years ago

**3. Who proposed the theory of Continental Drift?**

(A) **Wegener in** 1915 (B) Robert Smith

(C) Odum (D) None of these

**4. The Origin of Continents and Oceans was written by....**

(A) **Alfred** **Wegener** (B) Darwin



(C) Smith (D) None of these

**5. The theory which considers only the earth as a living entity is called Gaia theory. Who proposed the Gaia theory?**

(A) Rachel Carson (B) Charles Darwin

(6) **James Lovelock** (D) William Golding

**6. Who is the author of Gaia: A new look at life on Earth, published in 1979,**

**…………………**

(A) **James** **Lovelock** (B) Carson Rachel

(c) William Golding (D) None of these

1. **The English word environment is originated from........................** (A) Latin (B) Greek (**C) French** (D) None of these



1. **In French the environner means....**

**(A) Surroundings** (B) Table (C) Climate (D) Land

# Components of Earth/Environment: Biosphere/Lithosphere/Hydrosphere

**1. Mention the biotic component/s of environment ………………**

(A) Temperature (B) Climate (C) Wind **(D) None of these**

**2. The top crust of the earth is called................**

**(A) Lithosphere** (B) Stratosphere (C) Surface (D) None of these

**3. All external factors that affect the organisms are called ....................**

(A) Politics (B) Culture (**C) Environment** (D) None of these

**4. The layer of water on the surface of the earth is called ………………**

**(A) Hydrosphere** (B) Lithosphere (C) Atmosphere (D) All these

**5. Biosphere is the ……………..**

1. Solid shell of inorganic materials on the surface of the Earths
2. **Thin shell of organic matter on the surface of earth comprising of all the living things**.

**6. The environment, modified by human activities is called ………..... environment**

(A) Modern (B) Noosphere (C) Urban (**D) Anthropogenic**

**7. The short-term properties of the atmosphere at a given place & time is referred as**

**…………………….**

(A) Climate (B) Microclimate (C) Season **(D) Weather**

**8. The component of the environment that includes all plants, animals, micro-organisms and human beings is called ……………....**

(A) Abiotic **(B) Biotic** (C) Natural (D) None of these

**9. Climatic conditions in the areas of limited size constitute:**

(A) Local climate (B) Climate (C**) Microclimate** (D) Weather

**10. Organisms which are morphologically similar, interbreed offspring constitute a**

**……………….**

(A) Population **(B) Species** (C) Community (D) Ecotype

**11. Which of the following is an example of negative impact of developmental activities on** **the Hydrosphere?**

(A) Air pollution (B) Soil pollution (C) Soil erosion (D) **Water pollution**

**12. The soil horizon which is hard and devoid of organic matter is called …………**

(A) A horizon (B) **B horizon** (C) Rock horizon (D) None of these

**13. The important sphere which absorbs the UV radiations is …………….**

(A) Ecosphere (B) Ionosphere **C) Stratosphere** (D) Biosphere

**14. Which of the following conceptual spheres of the environment is having the least storage** **capacity for matter?**

(**A) Atmosphere** (B) Lithosphere (C) Hydrosphere (D) Biosphere

**15. Which of the following components of the environment are effective transporters of matter?**

1. **Atmosphere and hydrosphere**
2. Atmosphere and lithosphere
3. Hydrosphere and lithosphere
4. Lithosphere and hydrosphere

**16. The outermost region of the earth's surface inhabited by organic matter is ....** (A) Mesosphere (B) Lithosphere **(C) Biosphere** (D) None of these **Definition and Nature of Environmental Study**

**1. Environmental Study deals with …………….**

(A) Plants (B) Animals (C) Microbes (D) **Natural** **world**

**2. Environmental studies involve studies of …………......**

(A) Evolution of life (B) All aspects of social environment (C) Nitrogen cycle **(D) All aspects of environment**

**3. Environmental Study is related to .....................**

(A) Geography (B) Chemistry (C) Biology (D) **All** **these**

**4. Environmental Science or Study is ............... in nature**

(A) Multidisciplinary (B) Interdisciplinary

(C**) Both A and B** (D) None of these

**5. The scope of Environmental science or study is ………………….**

(A) **Very wide** (B) Very narrow (C) None of these

**6. An objective, empirical and comprehensive study of environment and its different dimensions is called**

(A) **Environmental Science** (B) Environmental Study

(C)Both (D) None of these

# Importance of Environmental Studies

**1. Environmental Study is helps in....**

1. Understanding environment objectively
2. Restoring the ecological balance
3. Managing the all kinds of waste
4. **For all these reasons**

**2. Environmental Study is helps in .............**

1. Managing environmental assets judiciously
2. In achieving sustainable development
3. In managing all resources
4. **For all these reasons**

**3. Environmental Study is helpful in ………....**

1. Formulating suitable policies and programmes for the protection of environment
2. Creating awareness among public about environment
3. Protecting biodiversity
4. **For all these reasons**

**4. The Study of Environmental Study is essential for .............**

(A) Teachers (B) Forest officers (C) Lawyers (**D) Every citizen**

# Sustainable Development

**1. Mention the name of person/commission/agency that first time used the world sustainable development**

1. **World Commission on Environment and Development**
2. WHO Report

© Report of International Labour Organisation

(D) None of these

**2. The report of World commission on Environment and Development is also called as**

**…………………......**

(A) **Bruntland Report** (B) WHO (C) ILO (D) None of these

**3. The sustainable development give attention to the ………………..**

(A) Needs of present generation (B) **Needs of Future Generation** © Needs of Both generations (D) Ignores both generations

**4. Sustainable development involves ...................**

1. Equality between ages and genders
2. **Equality between classes and races** © Equality between continents & countries (D) All the above.

**5. The important documentary report pertaining to sustainable development published by UNO in 1983 is ……………....**

1. **Our Common Future: An Environmental Perspective Until the year 2000 and Beyond\***
2. Threat to Environment

© Threat to Biodiversity at a Glance

(D) None of these

**6. Sustainable development will not aim at ......................**

(A) Social economic development which optimizes the economic and societal benefits available in the present, without spoiling the likely potential for similar benefits in the future. (B) Equitably distributed levels of economic wellbeing that can be perpetuated continually

© Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

**(D) Maximizing the present-day benefits through increased resource consumption.**

**7. The problems associated with Fossil fuel-based pattern of energy use is/are ……..** (A) Limited natural reserve.

(B) Environmental pollution.

© Lacks long term sustainability

**(D) All These**

**8. Sustainable development means ......................**

1. **Development that cares & shows concern for the management of all resources**
2. Development that takes full account of environmental consequences of all economic activity

© Development that continues without halt

(D) All these

**9. Sustainable development gives attention to ...**

1. Conservation of resources
2. Management of exhaustible resources © Judicial use of all resources **(D) All these**.

**10. The idea of sustainable development was conceived in early ……………**

(A) 1950 (B)1980 (**c) 1970** (D) 1966

**11. Mark the wrong statement pertaining to sustainable development .........................**

1. Sustainable development gives attention to conservation of resources
2. Sustainable development gives importance to management of exhaustible resources

**© Emphasizes economic development ignoring the environment**

(D) None of these

**12. The concept of sustainable development gained currency in ................**

(A) Late 1970 **(B) Late 1990** (C) Late 1900 (D) None of these [Late 70s: The years between 1975 and 1979 (the years in the second half of the decade)

**13. Mark the incorrect statement among the followings**.

1. Unsustainable growth uses and depletes more resources
2. **Sustainable development does not give much attention to environmental pollution.**

© Sustainable growth gives attention to recycling and reuse of things

(D) It gives attention to the needs of present and coming generation

**14. About Sustainable development we can say that it ……………..**

1. Recognizes the right of future generation over the existing resources.
2. Emphasizes the use of renewable resources

© It speaks of equitable distribution of fruits of development

**(D) All these**

**15. The development which causes minimum damage to the environment is ................**

1. Rapid development
2. **Sustainable development**

© Progressive development

(D) All the above

**16. Among the followings which is not suitable for achieving the sustainable development** (A) Conservation and rational utilization of resources

(**B) Increasing population**.

© Controlling pollution

(D) Developing positive attitude towards environment

**17. Which of the following statements in relation to sustainable development is not true?**

1. Sustainable development is defined as the development that meets the needs of present without compromising the ability of our future generations to meet their own needs
2. **Sustainability has the main objective of purely focussing on the natural environment**

© Sustainable development of various countries and the entire world is the only solution left with mankind to survive for a longer period on Earth

(D) Sustainable development not only considers the protection of the environment but also the maintenance of economic viability as well as the social and ethical considerations

**18. Social, economic and ecological equity is the necessary condition for achieving ……….**

(A) Social development (B) Economic development

**© Sustainable development**. (D) Ecological development



# Public Awareness, Environmental Education & Protection

**1. The strategies for creating public awareness about environment are.....................**

1. Street plays, dramas, songs
2. Celebration of environmental days
3. News Papers and advertisements
4. **All these**

**2. The methods of creating environmental awareness is/are …………..**

1. Environmental Calendar
2. Celebration of environmental Days
3. Mass Media
4. **All these**

**3. Environmental Degradation, ecological imbalance and pollution are generally attributed to lack of..........**

1. Awareness about environment
2. Knowledge about ecosystem
3. Lack of Literacy and understanding
4. **All these**

**4. Point out the wrong pair**

1. Earth Day April 22
2. **Inter-national Biodiversity Day May 22**
3. World Environment Day June 15
4. World Ozone Day May 1

**5. The World Environment Day celebrate on .................**

**(A) June 5** (B) July 5 (C) August 5 (D) September 5

**6. World Environment Day (WED) was started by the UN General Assembly in 1972 at**

**the** **................. conference on Environment**

(A**) Stockholm** (B) Vienna (C) Beijing (D) None of these

**7. The theme for 2012 World Environmental Day was ……………**

(A) Profitable economy (**B) Green economy**

(C) Export economy (D) None of these

**8. Green economy aimed at:**

(A) Improved well-being and social equity

(B) Reducing environmental risks

(C) **Both A and B.**

(D) None of these

**9. The World Forest Day is celebrated on:**

(A) **21st March** (B)21st April (C)21st June **(**D) 21st May

**10. Earth Hour was observed in:**

(~~A~~) **Sydney, Australia in 2007** (B) New Delhi in 2009

(C) New York in 2011 (D) None of these

**11. Which one of the following pair is not correctly matched?**

1. World Ocean Day-June 8th
2. World Forest Day-March 21
3. Earth Day - April 22nd
4. **World Population Day -July 25th**

**12. Match the followings**

1. **1972** **1. Quo to of Japan conference**
2. **1987** **2. Montreal Conference**
3. **1998** **3. Stockholm Conference**

**(A) a-3, b-2, c-1** (B) a-3, b-1, c-2 (C) a-1, b-2, c-3 (D) None of these

**13. Match the terms of Column I with appropriate terms of Column II.**

**Column** I **Column II**

1. **Ecology (A) Bacteria and fungi**
2. **Niche (B) Earth crust**
3. **Edaphic (C) Soil**
4. **Lithosphere (D) Haeckel**
5. **Decomposers (E) Grinne**
6. **1-d ii-e iii-c iv-b v-a**
7. 1-a ii-b iii-d iv-e v-c
8. 1-a ii-e iii-d iv-e v-b
9. 1-b ii-a iii-c iv-d v-e

**14. In Karnataka the name Timmakka is associated with.............**

(A) Protection of lakes (B) Protection of Ponds © Protection of cows (D) **Planting of trees**

# ECOSYSTEM

**1. The term 'Ecosystem' was first proposed by............**

(A) E.P. Odum (B) **A.G. Tansley**. (C) Newton (D) Robert Brown.

1. **Ecosystem is also known by the other names like …………**
2. (A) Bioko Enosis (B) Microcosm **(C) Biosystem** (D) All these
3. **The term 'ecology' was coined by:**

(A) Misra (B) **Eanesht, Haeckel** (C) Tansley (D) Odum

**4. The study of interactions between living organisms and environment is called as ……..**

(A) Ecosystem (**B) Ecology**

(C) Phytogeography (D) Phytosociology.

**5. The term ecology is derived from oikos a Greek word. It means ....**

(A**) household** (B) Environment (C) Plant (D) Grass

**6. The area where fresh water mixes with saltwater is called ……..**

(**A) Estuary**. (B) Wetland (C) Aquifer (D) None of these

**7. Ecotone, a transitional area of vegetation between two different plant communities for example forest and grass land is called …………**

(A) Transition zone (B) Estuary **(C) Ecotone**. (D) Salt water intrusion

**8. The main source of energy for ecosystem is ………**

**(A) Sun**.(B) Petroleum (C) Wood (D) All these

**9. The role of an organism in the ecological system is known as ..........**

(A) Habitat (B) Herbivory **(C) Niche** (D) Interaction.

**10. An ecosystem consists of .........**

1. Green plants and animals
2. Green plants and decomposers
3. Producers and consumers
4. **Green plants, animals, decomposers & abiotic environment**.

**11. A community is:**

1. Group of plants belong to same species
2. Group of plants belonging to different species
3. **Different populations living together in a geographical area**
4. None of these

**12. An ecosystem is a collection of .............**

1. **Living components-microbes, plants, animals & fungi**
2. Non-living components-climate and chemicals
3. Both A and B.
4. None of these
5. **Which one of the following is an abiotic component of the ecosystem?**
6. (A) Fungi (B) Bacteria (C) Plants (D) **Humus**.
7. **Mention which is not an abiotic component of eco-system?**

(A) Temperature (B) Climate

(C) **Man & other living organism** (D) None of these

**15. Abiotic components of forests are:**

(A) Light & rain fall (B) Temperature

(C) Composition of soil **(D) All these**

**16. Mention the abiotic factors of ecosystem ……….**

(A) Temperature (B) Rainfall (C) Ocean Currents (**D) All these factors**

**17. The first necessity of ecosystem is ....**

(A) Water  ~~(~~B) **Energy.** (C) Nitrogen (D) Oxygen

**18. Which one of the following is an abiotic component of the ecosystem?**

(A) Bacteria (B) Plants (C**) Humus** ↑ (D) Fungi

**Producers/Consumers/ Decomposers**

**1. Man is a ………..**

(A) Producer (B) **Consume**r (C) Parasite (D) Decomposer

**2. Which amongst the following is primary consumer?**

(A) Bacteria (B) Tiger (**C) Goat.** (D) Vulture

**3. Which of the following is a possible producer in an ecosystem**?

1. **Plants and some bacteria capable of producing their own food**
2. Animals
3. Human beings
4. Fish

**4. Match the followings**

1. **Elephants 1. Producers**
2. **Trees 2. Primary consumers**
3. Lion and tiger **3. Top carnivores**
4. **Fungi, bacteria 4. Decomposers**

(A) a-1, b-2, c-3, d-4 (B) a-4, b-3, c-1, d-2

**(C) a-2, b-1, c-3, d-4** (D) None of these

**5. Any living organism that synthesizes organic substances from inorganic molecules by using** **light or chemical energy, thereby manufacturing its own food is called....**

(A**) Autotroph** (B) Consumer (C) Decomposers (D) None of these

**6. Which of the following statements is not true?**

1. In an ecosystem, sustained development (evolution) is facilitated by a close physical proximity and functional matching between the producers and the consumers.
2. In the anthropo-system, there is usually a significant physical displacement between the producer and the consumer.
3. In an ecosystem most of the materials are transferred from the producers to the recyclers and only a small fraction is passed through the consumers to the recyclers.
4. **In the anthropo-system the flow of material from the producers directly to the recyclers is a major proportion**

**7. Which amongst the following is decomposer in ecosystem?**

(A) Green plant (B) Animal **(C) Bacteria** (D) (A) and (B) **8. About producers or autotrophs of ecosystem we can say that....**

1. They convert solar energy into chemical bond energy of chemical compounds
2. They manufacture their own food for self-consumption and to be consumed by others
3. This group includes plants that have chlorophyll
4. **All these**

**9. The primary producers in a forest ecosystem are:**

1. Herbivores
2. Carnivores
3. **Chlorophyll containing plants and trees**
4. Bacteria

**10. Grasshopper, deer, rabbits, goat and cattle are .....consumers**

(A) **Primary.** (B) Top carnivores (C) 2nd order (D) None

**11.Among the followings who are primary consumers in the ecosystem?**

(A) **Herbivores.** (B) Carnivores

(C) Omnivores (D) None of these

**12. Point out the name of scholar who called primary consumers that is herbivores as Key Industry animals?**

(**A) Elton.** (B) Mannheim (C) Vandana Shiva (D) None of these

**13. Frog, birds, fox and cat are examples for ....**

(A) Primary carnivores. (B) **Secondary carnivores**

(C) Top carnivores (D) None of these

**14. About decomposers we can say....**

1. They obtain food from dead bodies of plants and animals
2. They are small in size
3. They add minerals to soil and make them available for plants (D) **All these**.

# Flow of Energy

**1. The main source of energy for ecosystem is…………..**

(**A) Sun** (B) Petroleum (C) Wood (D) All these

**2. Energy flow begins with …………....**

(A**) Sun** (B) Moon (C) Mars (D) All these

**3. The energy concerned with ecosystem is ..................**

(A) **Chemical energy** (B) Light energy

(C) Heat energy (D) None of these

**4. Which of the following receives more energy in an ecosystem?**

**(A) Producers** (B) Primary consumers

(C) Secondary consumers (D) Decomposers

1. **The flow of energy in the ecosystem is governed by........ Laws of Thermodynamics** (A) one **(B) Two**. (C) Three (D) None of these
2. **The law of thermodynamics states that....** (A) Energy can neither be created nor destroyed **(B) Both A and C.**

(C) Every transformation of energy is accompanied by its dispersion (D) None of these

# Ecological Succession

**1. Among the followings......community is in perfect harmony with the surroundings**

**(A) Climax.** (B) Pioneer(C) Transitional (D) None of these

**2. The first community that inhibits a bare area is called ........... community**

**(A) Pioneer** (B) Climax (C) Transitional (D) None of these

**3. The organisms first colonizing the bare area are called………….**

**(A) Pioneers**.(B) Seres. (C) Climax. (D) None of these

**4. The intermediate communities between pioneer and climax communities are called ...communities**

**(A) Serial/transitional**. (B) Intermediate (C) Middle (D) None of these

**5. Among the statements pertaining to ecological succession mark the wrong one.**

1. **Succession tends to progress from stable biotic community to unstable biotic community**
2. There is some regularity and uniformity in the process of succession
3. Succession tends to progress from simple food chain to complex food webs
4. Succession of plants and animal communities takes place simultaneously

**6. The biotic succession that occurs on place devoid of earlier life is called …..... succession**

**(A) Primary**. (B) Secondary (C) Ultimate (D) None of these

**7. Succession taking place on newly formed island or newly formed lake is called....**

**(A) Primary**. (B) Secondary (C) Ultimate (D) None

**8. Left undisturbed, ecological succession will eventually result in the establishment of a** **............ community**

**(A) A climax**. (B)Transitional (C) Unstable (D) None of these

1. **If succession takes place in forest that is destroyed by forest fire or on a land that is destroyed by land slide or earth quake is called ........... succession** (A) Primary **(B) Secondary**. (C) Re-succession (D) None of these
2. **The organisms first colonizing the bare area are called ................. (A) Pioneers.** (B) Seres (C) Disseminates (D) None of these

**11.The succession developing on bare rock is called....**

(A) Xerosere (B) Psammosere **(C) Lithosere**. (D) Hydrosere

**12. Intermediate communities appearing in a succession are:**

(A) Pioneer **(B) Sere.**  (C) Climax (D) None

**13. A primary succession on bare rock starts with .........**

**(A) Lichens.** (B) Herbs (C) Trees (D) Animals.

**14.Phenomenon of succession is .............**

(A) static (B) orderly (C) community controlled (D) **both B and C.**

**15. A community that starts the process of succession in a habitat is called ....... community** (A) Biotic (B) Abiotic (C) **Pioneer.** (D) Artificial

# Food Chain/Food Webs

**1. In a food chain, animals constitute the ............. trophic level**

(A) First level (B) **Second level** (C) Intermediate. (D) Ultimate

**2. In a food chain, green plants constitute .......... trophic level**

(A**) First trophic level**. (B) Second (C) Ultimate trophic (D) Intermediate

**3.The correct path of energy flow in an ecosystem is:**

(A) Producers carnivores herbivores decomposers (**B) Producers herbivores carnivores decomposers.**

(C) Herbivores carnivores producers decomposers (D) Herbivores producers carnivores decomposers

**4. The shorter the food chain ...................** (**A) Greater is the available food energy.**

1. Minimum is the available food energy
2. No food energy is available
3. None of the above

**5. The primary producers in a forest ecosystem are:**

(A) Herbivores (B) Carnivores

**(C) Chlorophyll containing plants and trees**. (D) Bacteria

**6. A food web consists of......**

(A) a portion of a food chain (B) producers, consumers and decomposers (**C) interlocking food chains.**  (D) a set of similar consumers

**7. A trophic level refers to ...........**

1. Area in the tropics.
2. **Organism's position in a food chain.**
3. An organism's position in an ecosystem.
4. An organism's position in a biome.

**8. The shorter the food chain ..........**

**(A) Greater is the available food energy**. (B) Minimum is the available food energy

(C) No food energy is available (D) None of the above

**9. Which of the following is a true representation of a food chain?**

(A) Grass Tiger Rabbit Grasshopper (B) Tiger Rabbit Grasshopper Grass (C**) Grass Grasshopper Rabbit Tiger.**

(D) Rabbit Tiger Grass Grasshopper

**10.The correct path of energy flow in an ecosystem is:**

(A) Producers carnivores herbivores decomposers **(B) Producers herbivores carnivores decomposers.**

1. Herbivores carnivores producers decomposers
2. Herbivores producers carnivores decomposers

**11.Complete the following food chain**

Plant frog snake …………..

(A) Grasshopper **(B) Hawk** (C) Rabbit (D) Wolf

**12. A food web consists of ...............**

1. Single food chain
2. two separate food chains
3. **more than 2 interconnected food chains**.
4. None of the above

**13.In a food chain the largest population is that of ……….**

**(A) Producers.**  (B) Decomposers

(C) Primary consumers (D) Tertiary Consumers

**(Food chains were first introduced by the African-Arab scientist and philosopher AlJahiz in the 9th century and later popularized in a book published in 1927 by Charles Elton, which also introduced the food web concept)**

**14."An organism, especially a fungus or bacterium, that grows on and derives its nourishment from dead or decaying organic matter" is called …………..**

**(A) Saprophyte**. (B) Animals (C) Producers (D) None of these

15. In the food chain saprophytic organisms are:

(A) Producers (B) Predators (C) Consumers **(D) Decomposers**.

**16. The food chain in which micro-organisms breakdown dead producers is called .......... food chain**

(A) Consumer food (B) Predator (C) Parasitic food (D) **Detritus.**

**17. Which one is the correct food chain?**

1. **Phytoplankton Zooplankton Fish.**
2. Zooplankton Phytoplankton Fish
3. Grass Fish Zooplankton
4. Zooplankton Protozoan Fish

**18. Standing crop biomass is measured in ....**

(A) glm2 (B) kg/m2 (C) tonnes (D) **All the above.**

**19. A food chain consists of ..............**

1. Producers’ carnivores and decomposers
2. Producers, carnivores and decomposers
3. Producers, herbivores and carnivores
4. **Producers, consumers and decomposers.**

**20. In the food chain saprophytic organisms are:**

(A) Producers (B) Predators (C) Consumers (D) **Decomposers.**

**21. Detritus food chain in comparison to grazing food chain is:**

(A) **Generally, longer** (B) Generally shorter.

(C) Equal (D) None

**22. In a grass**➡ **deer** ➡ **tiger, food chain.**

**The biomass of grass is 1 ton. The tiger biomass** **will be .....** (A) 100 kg (B) **10 kg**.

1. 150 kg
2. 1 kg