

ENVIRONMENT-ONLINE-PART-1

Introduction

- Seasons and Climate classifications
- Drainage : River systems
- Industrial and Transportation Developments
- Population
- Ecology & Ecosystem
- Food Chain & Food Web
- Tropic Levels
- Energy Systems
- UNDP & Development Goals
- Environmental Acts & Agreements

ENVIRONMENT

- *Environ* (French): surrounding
- The sum total of the stimulation a person receives from his conception throughout his life
- Inclusive of all aspects of environment– Physical, social, intellectual, economic, political, moral, cultural, emotional

COMPONENTS OF ENVIRONMENT

1. Atmosphere
2. Lithosphere
3. Hydrosphere
4. Biosphere

ATMOSPHERE

- The protective blanket of gases, water vapour and dust that covers earth
- Sustains life on earth and saves environment from the outer space
- Gases– colourless, odourless, tasteless
- Cosmic rays & Electromagnetic radiations from outer space are absorbed
- UV rays absorbed, IR and radio waves transmitted

LAYERS OF ATMOSPHERE

1. Exosphere
2. Thermosphere
3. Ionosphere
4. Mesosphere
5. Stratosphere
6. Troposphere

Exosphere

- The uppermost layer
- Almost 700 km above sea level
- Atmosphere thins out and merges with interplanetary space
- Gases found: lightest atmospheric gases; mostly hydrogen and carbon di-oxide.
- Hard to define the boundary between the exosphere and outer space– hence considered as interplanetary space or 'outer space'

Thermosphere

- Layer between Exosphere & Ionosphere
- 80 km above sea level
- The layer of atmosphere in which ultraviolet radiation causes photoionization of molecules, creating ions in the ionosphere
- Temperature of the layer depends upon altitudes and solar activity
- The International Space Station orbits the Earth within the middle of the thermosphere

Ionosphere

- The ionized part of earth's atmosphere
- About 60 km above sea-level; contains thermosphere and parts of exosphere & mesosphere
- Plays an important role in atmospheric electricity (lightning)
- Influences Radio-propagation

Mesosphere

- Contains Ionosphere and lies below thermosphere
- Temperature decreases when altitude increases– the top most layer is (-143°F)– coolest layer of atmosphere.
- Lowest boundary is 50 km above earth surface

- A non-uniform layer due to certain chemical species and molecular masses
- Meteors are found in this layer

Stratosphere

- Possess stratified temperature layers- warmer at higher levels and cooler at layers close to earth
- 10 to 30 km above sea level
- Temperature increases with altitude
- Responsible for the formation of **ozone layer**
- The optimal height which commercial aircrafts fly- more efficiency due to low temperature

Troposphere

- The lowest layer of atmosphere where all weather conditions take place
- Average Height: 18 km (tropics) to 6km (polar regions)
- Contains **78% Nitrogen**, 20% Oxygen, 0.93% Argon and 0.04% carbon dioxide
- Also contains variable amounts of water vapour

LITHOSPHERE

- The surface of Earth; also called Crust
- Includes mountains, plains and ocean floors
- From the soil beneath our feet to 150 km below the surface
- Below the crust come Mantle; has high heat and pressure that could melt & deform rocks
- Then comes Core: the centre of the earth with high temperature

HYDROSPHERE

- Water bodies such as lakes, ponds, rivers, ocean and ice that covers earth surface
- **Water Cycle** is a process by Hydrosphere
- The abundance of liquid water on the surface of earth
- Contributes to the sustenance of life on earth

BIOSPHERE

- The sum of all organisms and their habitats
- Includes humans, animals, plants and microorganisms
- The zone of interaction between air, water and land
- Six different types of biomes:

Deserts, Forests, Grasslands, Aquatic, Tundra and Chaparral

- Interaction b/w organisms takes place in the form of food chain

TIME FOR SOME QUESTIONS

Question 1:

Which of the following are the layers of atmosphere?

- Troposphere
- Thermosphere
- Lithosphere
- Exosphere
- Mesosphere

Select the correct code:

- i, ii, iii & iv
- ii, iii, iv & v
- ii., iii & v
- i, ii, iv & v

Answer: d.

Question 2:

Which layer of atmosphere enables Radio Transmission?

- Exosphere
- Thermosphere
- Ionosphere
- Stratosphere

Answer: c.

Question 3:

Which is the layer of atmosphere which has its lowest layer at 50 km above sea level that holds the presence of meteors?

- a) Stratosphere
- b) Mesosphere
- c) Troposphere
- d) Thermosphere

Answer: b.

Question 4:

Which layer of atmosphere has the optimum height to fly commercial aircrafts?

- a) Ionosphere
- b) Stratosphere
- c) Troposphere
- d) Lithosphere

Answer: b.

Question 5:

Match the following:

- | | |
|-----------------|-------------|
| (A) Lithosphere | (i) Life |
| (B) Atmosphere | (ii) Water |
| (C) Hydrosphere | (iii) Stone |
| (D) Biosphere | (iv) Air |

- | (A) | (B) | (C) | (D) |
|-----------|------|-------|-------|
| (a) (iii) | (i) | (iv) | (ii) |
| (b) (ii) | (iv) | (iii) | (i) |
| (c) (iv) | (i) | (ii) | (iii) |
| (d) (iii) | (iv) | (ii) | (i) |

Answer: d.

Question 6:

Which layer of the atmosphere contains the ozone layer, which plays a crucial role in absorbing harmful ultraviolet (UV) radiation from the sun?

- a) Troposphere
- b) Stratosphere
- c) Thermosphere
- d) Lithosphere

Answer: b

Question 7:

- **Assertion (A):** The mesosphere is the layer of the atmosphere where most weather phenomena, such as clouds and storms, occur.
 - **Reason(R):** The mesosphere is characterized by the presence of water vapor and water droplets.
- a) Both the (A) and (R) are true, and the (R) is a correct explanation of the assertion.
 - b) Both the (A) and (R) are true, but the (R) is not a correct explanation of the assertion.
 - c) (A) is true, but (R) is false.
 - d) Both (A) and (R) are false

Answer: d

Question 8:

- **Assertion (A):** The thermosphere is the hottest layer of the Earth's atmosphere.
 - **Reason(R):** The thermosphere contains very few gas molecules, but it can reach temperatures of thousands of degrees Celsius.
- a) Both the (A) and (R) are true, and the (R) is a correct explanation of the assertion.
 - b) Both the (A) and (R) are true, but the (R) is not a correct explanation of the assertion.
 - c) (A) is true, but (R) is false.
 - d) (A) is false, but (R) is true.

Answer: a

DEVELOPMENT AND ENVIRONMENT

Millenium Development Goals

- **September 2000:** United Nations Millennium Declaration
- Aimed at reducing extreme poverty– adopted by world leaders in New York
- A series of time-bound targets called Millennium Development Goals (MDGs)
- Initially aimed to be achieved by 2015

8 Millenium Development Goals

- 1) **Eradicate Extreme Poverty & Hunger**
- 2) **Achieve Universal Primary Education**
- 3) **Promote Gender Equality and Empower Women**
- 4) **Reduce Child Mortality**
- 5) **Improve Maternal Health**
- 6) **Combat HIV/AIDS**
- 7) **Ensure Environmental Sustainability**
- 8) **Develop a Global Partnership for Development**

Findings of the final MDG Report

- Decrease in the number of poverty-stricken population by more than a half
- Decline in Proportion of Undernourished people in the developing regions by almost half
- Increase in Primary School Enrolment Rate in developing regions : 91%
- Increase in Enrolment of Female Students
- Better treatment facility for HIV/AIDS, malaria and tuberculosis
- Under-five Mortality Rate: ▼Half
- Maternal Mortality Rate : ▼45%
- Better access to sources of drinking water

(Reported by United Nations Development Programme)

Sustainable Development Goals

- Global Goals
- Framed after the success of MDGs
- Ending Poverty, Protecting the Planet, Ensuring Peace & Prosperity to Everyone
- Came to effect in 2016; targets to be achieved by 2030
- To be implemented in more than 170 countries
- 169 Targets aiming at 17 Goals

17 Sustainable Development Goals

- 1) No Poverty in all its means by 2030
- 2) Zero Hunger and improved nutrition with sustainable agriculture
- 3) Good Health & Well-Being at all ages
- 4) Quality Education with lifelong opportunities
- 5) Gender Equality with empowerment
- 6) Clean Water & Sanitation
- 7) Affordable & Clean Energy
- 8) Decent Work & Economic Growth
- 9) Industry, Innovation & Infrastructure
- 10) Reduced Inequality within & among countries
- 11) Sustainable Cities & Communities
- 12) Responsible Consumption & Production
- 13) Climate Action against Climate Change
- 14) Life below water conservation & sustainability
- 15) Life on Land
- 16) Strong Peace & Justice Institutions
- 17) Partnerships to achieve goal

Key: A Story to Remember SDGs

- Once upon a time near the river named Po Hu He at the EdGE of the CleWEn Forest, there lived a monster-couple - EcoGro, the 3 Ill-ed monster & Red I -ed monster, SusCit. They were responsible in consuming food and after eating food they learnt Pro Climbing. Meanwhile, two children were born: WaLife & Lalife. They ran about in Pjs like Partners.

[Credits: Indu C]

UNDP Strategic Plan (2018-2021)

- Help countries in achieving SDGs & MDGs
- Creates framework in helping nations to achieve these targets

Aims

1. Eradicating poverty in all forms
2. Accelerating structural transformations for sustainable development across SDGs

3. Building resilience to crises & shocks in order to safeguard development gains

Answer this: [Nov.2021]

Given below are two statements:

(A): There has to be an integrated approach to achieve targets of Sustainable Development Goals (SDGs)

(R): Many of the SDGs are interconnected

In the light of the above statements, choose the correct option:

- a) Both (A) and (R) are true and (R) is the correct explanation of (A)
- b) Both (A) and (R) are true but (R) is not the correct explanation of (A)
- c) (A) is true but (R) is false
- d) (A) is false but (R) is true

Answer: a)

Answer this: [Oct.2022]

Given below are two statements:

Statement I: Millennium Development Goals (MDGs) had a total of 31 targets to be achieved by 2015

Statement II: There are 8 goals in MDGs and 17 in SDGs

In the light of the above statements, choose the correct option:

- a) Both Statement I and II are true
- b) Both Statement I and II are false
- c) Statement I is true but Statement II is false
- d) Statement I is false but Statement II is true

Answer: d)