

# Question Bank for Principle of Environmental Sciences

## Q1/ Define the following (Only Ten)

- |                          |   |                   |
|--------------------------|---|-------------------|
| 1- Environmental Science | 2- Tropopause                           | 3- Bioaerosol     |
| 4- Ozone                 | 5- Cryosphere                           | 6- Igneous rocks  |
| 7- PSC                   | 8- Organic matter                       | 9- Soil pollution |
| 10- ionosphere           | 11- Boring Definition for Environmental |                   |
| 12- Lithosphere          |   |                   |

## Q2/ Answer only 8 of the following questions, except Question Number 9

- 1- Compare Briefly between Stratosphere and Troposphere (3 Mark)
- 2- The rocks on the earth's crust are classified into three categories? What are these classes and mention each in detail? (3 Mark)
- 3- Compare between Physical weathering and Chemical weathering (3 Mark)
- 4- What are main Functions of soil? (3 Mark)
- 5- Give detail for air and air quality? (3 Mark)
- 6- What are main elements of Environment? (3 Mark)
- 7- What are main sources of nitrogen in soil (3 Mark)
- 8- Environment studies have become significant for some reasons, what are these reasons? (3 Mark)
- 9- If the thickness of ozone layer is 0.5 meter, how you convert it to Dobson unit? (4 Mark)

## Q4/ Define the following (Only Seven)

- |  |                   |                   |
|--|-------------------|-------------------|
| 1- Douglas and Holland for Environment | 2- Hydrosphere    | 3- Biosphere      |
| 4- Stratopause                         | 5- Turbidity      | 6- Igneous rocks  |
| 7- Particulate matter                  | 8- Organic matter | 9- Soil pollution |

**Q5/Answer the following questions**

- 1-What are the differences between biodegradable and non-biodegradable organics and biodegradable organics in water (3 Mark)
- 2-What are the main types of UV Radiation? (3 Mark)
- 3- Compare briefly between carbonate and noncarbonate hardness (3 Mark)
- 4-What are main Functions of soil? (3 Mark)
- 5-What are main components of Aerosol? (3 Mark)
- 6-What are the main components of Misras Report through recognizing four basic principles of Ecology? (3 Mark)
- 7-If the thickness of ozone layer is 0.1 meter, how you convert it to Dopson unit? (4 Mark)

**Q6/ Define only Six of the following:**

- |                |                       |                         |
|----------------|-----------------------|-------------------------|
| 1- Food Chain  | 2- Ecological pyramid | 3- Biodiversity         |
| 4- Ammensalism | 5- Mortality          | 6- Incomplete ecosystem |
| 7- Biomes      | 8- Pioneer community  |                         |

**Q7/Answer Only six of the following questions: -**

- 1-Mention pyramid of number in detail including status of pyramid (Inverted or upright or both), Figures, unit of measurement.
- 2-Compare briefly between photoautotroph and chemoautotroph.
- 3-Count only four biogeochemical cycles in nature.
- 4-What are main types of Diversity?
- 5- Discuss briefly the Tundra biome.
- 6-Compare between Intraspecific competition and interspecific competition.

7- What are Factors Regulating Population growth?

8-Mention some threats to climax community.

**Q8/ Define the following**

1- Particulate matt

2- Photochemical smog 3- Bioaerosole

4- Ozone

5- Cryosphere 6- Igneous rocks

7- Biological weathering

8- Organic matter 9- Soil pollution

10- ionosphere

**Q9/Answer the following questions: -**

1-Chemical reaction in Atmosphere

2-The rocks on the earth's crust are classified in to three categories? What are these classes and mention each in detail

3-Compare between Physical weathering and Chemical weathering..

4-What are main Functions of soil?

5- Give detail for air and air quality?

**Q10/ Define the following (Only Five):**

1- Environmental Science

2- Boring Definition for Environmental

3- Lithosphere

4- Biosphere

5- Cryosphere

6- Tropopause

7-PSC

**Q11/Answer Only five of the following questions: -**

1-Compare Briefly between Stratosphere and Stratopause

- 2-What are main elements of Environment?
- 3-Count only major classifications of environment.
- 4-What are main sources of nitrogen in soil?
- 5- Environment studies have become significant for some reasons, what are these reasons?
- 6- If the thickness of ozone layer is 0.6meter, how you convert it to Dopson unit?

**Q12/ Define only Six of the following:**

- |                     |              |                 |                       |                 |                 |    |
|---------------------|--------------|-----------------|-----------------------|-----------------|-----------------|----|
| 1- <i>Ecology</i>   | 2- Ecosystem | 3- Biodiversity | 4- Primary succession | 5- Biodiversity | 6- Heterotrophs | 7- |
| Complete ecosystem  |              |                 |                       |                 |                 |    |
| 8- Climax community |              |                 |                       |                 |                 |    |

**Q13/Answer Only four of the following questions: -**

- 1-What are main methods for studying Ecology?
- 2-Compare briefly between photoautotroph and chemoautotroph.
- 3-Compare briefly between Primary and secondary Succession
- 4-What are main types of Diversity?
- 5- Compare between Alpha and Beta Diversity

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**Q14/Answer the following questions with true or false sign only.**

- 1-Without biodiversity a variety of organisms, ecosystems, and natural processes would not exist.
- 2- The loss of even a single species can alter a food chain/food web
- 3-Volcanic lava is a secondary succession.
- 4-Pioneer species colonize a bare or disturbed site.
- 5-Niche- an organism's role in its environment.

6-Autoecology is the study of Communities and their interaction with the environment

Q15/ Define only Six of the following:

1-Ecology

2- Ecological pyramid

3- Succession-

4- Ammensalism

5- Nataliy

6- Neutralism

7- Biomes

8- Limiting Factors

**Q16/Answer the following questions:**

A-What are main types of biomes? Discuss 2 of them in detail?

B-There are many divisions (Classification) of Ecology. First classification depends on individuals, mention it in detail.

C-Compare briefly between photoautotroph and chemoautotroph. Proof your answer with diagrams.

D-This are main types of Diversity? Mention each type briefly.

E-Compare briefly between Climax and pioneer.

F- What are Factors Regulating Population growth?

G-Competition can be classified according to the mechanism in to 3 types, what are these types? Mention each one briefly.

H-One of the most important biogeochemical cycles are Nitrogen cycle. Mention this cycle in detail and proof your answer with a diagram.

I-Compare between pyramid of number and pyramid of energy according to status of pyramid (Inverted or upright or both), Figures, unit of measurement.

**Q17/Answer the following questions with true or false sign only.**

a-The function of habitat includes the process how an eco-system works or operates in normal condition.

b-Biodiversity boosts (support) ecosystem productivity where each species, no matter how small, all have an important role to play.

c-Secondary Succession: The process of creating life in an area where no life previously existed.

d-Population dynamics is the branch of life sciences that studies short- and long-term changes in the size and age composition.

e-In ecology, parasitism describes a biological interaction where a predator feeds on its prey.

f- The energy flow from one trophic level to the other is known as a food chain

g- All living things are closely related to their environment.

g- Net Primary Productivity is the rate of storage of organic matter in plant tissues

**Q18/ Define only Six of the following:**

1- Population

2- Climax Community

3- Community

4- Intraspecific competition

5- Mortality

6- Herbivorous

7- Biomes

8- Climatograms

**Q19/Answer Only six of the following questions:**

A-Compare between desert biome and wetland biome.

B-What are methods of studying Ecology?

C-How can we measure biodiversity?

D-Compare briefly between primary and secondary succession.

E-There are seven possible combinations (Interactions) ranging from mutually beneficial or harmful interactions. Count these interactions only

F- One of the most important biogeochemical cycles are Phosphorus cycle. Mention this cycle in detail and proof your answer with a diagram.

Mention the

G- Mention the pyramid of energy according to status of pyramid (Inverted or upright or both), Figures, unit of measurement.

**Q20/Answer the following questions with true or false sign only**

1-As species become extinct, the fine balance of nature is disturbed to great extent.

2-Primary productivity is the rate of energy capture by producers.

3-The distribution of individuals in some species approach complete randomness. Plant with air borne seed dispersion mechanism might follow this pattern.

4-Parasitism is an interaction between two or more species, where species derive a mutual benefit

5- Overpopulation: Is a condition where an organism's numbers less than carrying capacity of its habitat

6- Secondary productivity: *These are the rates of energy storage at consumer's level.*

7-Levels of organization (Ecological spectrum) starts from molecule to biosphere.)

8- Flooding in one of the threats to climax community.

**Q21/ Define only Six of the following:**

1-Ecology

2- Ecological pyramid

3- Succession-

4- Ecological spectrum

5-Food Chain

6- Incomplete ecosystem

7- Homeostasis in the ecosystem

8- Autoecology

9- Omnivore

**Q22/Answer the following questions (Only Eight**

A-What are main differences between Structural and functional components of ecosystem?

B-There are many divisions (Classification) of Ecology. First classification depends on individuals, mention it in detail.

C-Compare briefly between photoautotroph and chemoautotroph. Proof your answer with diagrams.

D-This are main types of Diversity? Mention each type briefly.

E-Compare briefly between Climax and pioneer.

F- What are main differences between Nectroph and Biotrophs in the ecosystem?

G- What are main threats to Climax Communities.

H-Compare between pyramid of number and pyramid of energy according to status of pyramid (Inverted or upright or both), Figures, unit of measurement.

I-During succession process many changes will occur, give us a summary of changes that occur during succession process.

**Q23/Answer the following questions with true or false signs and correct the highlighted words. (10 mark) each true answer takes 1 mark and the wrong answer with correction take 2 marks)**

a-Herbivores are also known as **primary consumers**.

b-Heterotrophs **can** produce their own food directly from sunlight

c-**Alpha diversity** indicates the degree to which species composition changes along an environmental gradient c-Secondary Succession: The process of creating life in an area where no life previously existed.

d-**Food webs** are more complex and involve lots of organisms

e-**Pyramide of number** can not be inverted



f-Approximately **10% to 20%** of the biomass is passed from one trophic level to the other.

g-During **secondary succession** some seeds in the soil begun to growth.

**Q24/ Define only eight of the following:**

- |                        |                         |                      |
|------------------------|-------------------------|----------------------|
| 1- Synoecology         | 2- Climax Community     | 3- Microconsumers    |
| 4- Secondary Consumers | 5 Ecological Pyramide - | 6- Herbivorous       |
| 7- Succession-         | 8- Pioneer organisms    | 9- Climax community- |

**Q25/Answer Only six of the following questions: -**

A-What are main differences between Sapotroph and Biotrophs in the ecosystem?

B-What are methods of studying Ecology?

C-How can we measure biodiversity?

D-Compare briefly between primary and secondary succession.

E-Compare between species diversity and ecological diversity briefly.

F- Why is Biodiversity important? Does it really matter if there aren't so many species?

G- Mention the pyramid of energy according to status of pyramid (Inverted or upright or both), Figures, unit of measurement.

H-what are main human caused factors that affect on the loss of habitat and biodiversity?

I-How can you compare between primary and secondary succession?

**Q26/Answer the following questions with true or false sign only**

1- Upright pyramid of numbers, the numbers of organisms mostly reduce from bottom to top

2-Primary productivity is the rate of energy capture by producers.

3- Most organisms eat only one organism

4- The energy flow from one trophic level to the other is know as a food chain

5- Secondary productivity: *These are the rates of energy storage at consumer's level.*