

Msc Botany
Semester III Internal II
Question bank paper I : Cell biology, Genetics Ecology and phytogeography

I. Multiple choice questions

1. The basic structural and functional unit of ecology is

- A) Population
- B) Community
- C) Ecosystem
- D) Biosphere

Answer: C) Ecosystem

2. Homeostasis in ecosystems refers to

- A) Energy loss
- B) Self-regulation
- C) Population growth
- D) Nutrient loss

Answer: B) Self-regulation

3. Which of the following represents the highest level of ecological organization?

- A) Population
- B) Community
- C) Ecosystem
- D) Biosphere

Answer: D) Biosphere

4. Raunkiaer's life form classification is based on

- A) Leaf size
- B) Habitat
- C) Position of perennating buds
- D) Root system

Answer: C) Position of perennating buds

5. Species diversity in a community includes

- A) Species richness only
- B) Species evenness only
- C) Both richness and evenness
- D) Biomass

Answer: C) Both richness and evenness

6. Primary productivity is the rate of

- A) Energy loss
- B) Biomass formation
- C) Respiration
- D) Decomposition

Answer: B) Biomass formation

7. The main source of energy in an ecosystem is

- A) Wind
- B) Electricity
- C) Sun
- D) Water

Answer: C) Sun

8. Litter fall mainly contributes to

- A) Energy flow
- B) Nutrient cycling
- C) Population growth
- D) Climate change

Answer: B) Nutrient cycling

9. Which biogeochemical cycle has a gaseous phase?

- A) Phosphorus
- B) Sulphur

C) Nitrogen

D) All of the above

Answer: C) Nitrogen

10. The C, N, P and S cycles are examples of

A) Energy cycles

B) Mineral cycles

C) Water cycles

D) Food chains

Answer: B) Mineral cycles

11. Köppen's classification is based on

A) Vegetation only

B) Soil type

C) Temperature and rainfall

D) Latitude

Answer: C) Temperature and rainfall

12. Thornthwaite's climatic classification emphasizes

A) Rainfall

B) Evapotranspiration

C) Wind velocity

D) Ocean currents

Answer: B) Evapotranspiration

13. Endemism refers to species that are

A) Widely distributed

B) Recently evolved

C) Restricted to a region

D) Migratory

Answer: C) Restricted to a region

14. Major air pollutant responsible for acid rain is

- A) CO₂
- B) SO₂
- C) O₃
- D) CH₄

Answer: B) SO₂

15. Photochemical smog is mainly caused by

- A) SO₂ and smoke
- B) CO and dust
- C) NO₂ and hydrocarbons
- D) Methane

Answer: C) NO₂ and hydrocarbons

16. Eutrophication results from excess of

- A) Heavy metals
- B) Nutrients
- C) Pesticides
- D) Oil

Answer: B) Nutrients

17. Greenhouse gases include

- A) O₂ and N₂
- B) CO₂ and CH₄
- C) SO₂ and NO₂
- D) Ar and Ne

Answer: B) CO₂ and CH₄

18. Ozone layer depletion is mainly caused by

- A) CO₂
- B) SO₂

C) CFCs

D) Methane

Answer: C) CFCs

19. Global warming leads to

A) Sea level rise

B) Increased UV radiation

C) Ozone formation

D) Soil fertility

Answer: A) Sea level rise

20. UV radiation mainly increases due to

A) Greenhouse effect

B) Ozone hole

C) Acid rain

D) Smog

Answer: B) Ozone hole

II. Fill in the blanks

1. The study of interactions between organisms and their environment is called ____.

Answer: Ecology

2. The basic functional unit of ecology is the ____.

Answer: Ecosystem

3. The total mass of living organisms in a given area is known as ____.

Answer: Biomass

4. The ability of an ecosystem to maintain stability is called ____.

Answer: Homeostasis

5. The arrangement of plants in vertical layers is known as ____ stratification.

Answer: Vegetation

6. The classification of plants based on life forms was proposed by ____.

Answer: Raunkiaer

7. Energy transfer in an ecosystem follows the ____ law of thermodynamics.

Answer: Second

8. The rate at which green plants produce organic matter is called ____ productivity.

Answer: Primary

9. Decomposition mainly occurs through the activity of ____.

Answer: Microorganisms

10. Carbon, nitrogen, and phosphorus cycles are examples of ____ cycles.

Answer: Biogeochemical

11. The most widely used climate classification was proposed by ____.

Answer: Köppen

12. The major greenhouse gas responsible for global warming is ____.

Answer: Carbon dioxide (CO₂)

13. The thinning of the ozone layer is mainly caused by ____.

Answer: CFCs

14. Excessive nutrient enrichment of water bodies is called ____.

Answer: Eutrophication

15. The major source of SO₂ in the atmosphere is ____ fuel combustion.

Answer: Fossil

16. Noise pollution is measured in ____.

Answer: Decibels

17. The gradual increase in Earth's average temperature is known as ____.

Answer: Global warming

18. UV radiation reaching Earth increases due to ____ depletion.

Answer: Ozone

19. The soil formed under grassland vegetation is ____ soil.

Answer: Chernozem

20. The rise in sea level is one of the consequences of ____ change.

Answer: Climate

III. One word answers

1. Levels of ecology

2. Define Biomass

3. Homeostasis

4. Biogeochemical cycles

5. Endemism

6. Green house gases

7. Ozone layer

8. Energy flow in ecosystem

9. Ecosystem

10. Phytogeography