

**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) CO<sub>2</sub>

B) SO<sub>2</sub>

C) O<sub>3</sub>

D) CH<sub>4</sub>

Answer: B) SO<sub>2</sub>

15. Photochemical smog is mainly caused by

A) SO<sub>2</sub> and smoke

B) CO and dust

C) NO<sub>2</sub> and hydrocarbons

D) Methane

Answer: C) NO<sub>2</sub> 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) O<sub>2</sub> and N<sub>2</sub>

B) CO<sub>2</sub> and CH<sub>4</sub>

C) SO<sub>2</sub> and NO<sub>2</sub>

D) Ar and Ne

Answer: B) CO<sub>2</sub> and CH<sub>4</sub>

18. Ozone layer depletion is mainly caused by

A) CO<sub>2</sub>

B) SO<sub>2</sub>

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 (CO<sub>2</sub>)

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 SO<sub>2</sub> 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.Biogeo chemical cycles

5.Endemism

6.Green house gases

7,ozone layer

8.Energy flow in ecosystem

9.Ecosystem

10.phytogeography