CBSE NCERT Based Chapter wise Questions (2025-2026)

Class-XII

Subject: Biology

Chapter Name : *Biodiversity and Conservation* (Chapter : 13)

Total : 6 Marks (expected) [MCQ(1)-1 Mark, SA(2)-5 Marks, CBQ(1)-4 Marks]

Level - 2(Higher Order)

MCQ Type Questions:

1. The highest species richness among vertebrates is observed in
   Ⓐ Tropical rainforests Ⓑ Coral reefs Ⓒ Mangrove forests Ⓓ Temperate grasslands
   [**Hint:** Compare biodiversity per unit area]

2. Which one correctly explains the species–area relationship?
   Ⓐ Species $\propto$ Area^2 Ⓑ Species $\propto$ log Area Ⓒ Log Species $\propto$ log Area Ⓓ Species $\propto$ Area
   [**Hint:** Arrhenius equation]

3. Which ecosystem shows maximum genetic diversity?
   Ⓐ Desert Ⓑ Tundra Ⓒ Tropical rainforest Ⓓ Taiga
   [**Hint:** Stability + long evolutionary time]

4. The "evil quartet" does NOT include
   Ⓐ Habitat loss Ⓑ Overexploitation Ⓒ Alien species invasion Ⓓ Climate change
   [**Hint:** NCERT list]

5. Which species is most vulnerable to extinction?
   Ⓐ High reproductive rate species Ⓑ Keystone species
   Ⓒ Endemic species Ⓓ Widely distributed species
   [**Hint:** Restricted distribution]

6. The slope of species–area curve in tropical regions is
   Ⓐ 0.1–0.2 Ⓑ 0.03–0.05 Ⓒ 0.6–1.2 Ⓓ 1.5–2.0
   [**Hint:** Compare temperate vs tropical]

7. Which is an ex-situ conservation method?
   Ⓐ Wildlife sanctuary Ⓑ Biosphere reserve Ⓒ National park Ⓓ Botanical garden
   [**Hint:** Outside natural habitat]

8. Which one is a correct match?
   Ⓐ Montreal protocol—global warning Ⓑ Ramsar Convenstion—ground water pollution
   Ⓒ Kyoto protocol—Climate change Ⓓ Basal convention—Biodiversity conservation
   [**Hint:** Levels of diversity]

9. The main reason for latitudinal gradient in biodiversity is
   Ⓐ Higher rainfall only Ⓑ Longer evolutionary time
   Ⓒ Higher soil fertility Ⓓ Human interference
   [**Hint:** Stability and speciation]

10. Which organism is commonly used as an indicator of biodiversity loss?
    Ⓐ Tiger Ⓑ Lichen Ⓒ Frog Ⓓ Butterfly
    [**Hint:** Environmental sensitivity]

Assertion-Reason based questions

Directions: The questions 11 to 15 have two statements—Assertion (A) and Reason (R). Of the two statements, mark the correct answer from the options given below :

A. Both Assertion and Reason are true and Reason is the correct explanation of the Assertion
B. Both Assertion and Reason are true but Reason is not the correct explanation of the Assertion
C. Assertion is true, but Reason is false
D. Assertion is false, but Reason is true

11. **Assertion:** Tropical regions have higher biodiversity than temperate regions.
Reason: Tropics have remained undisturbed for millions of years.

Ⓐ A Ⓑ B Ⓒ C Ⓓ D

[**Hint:** Evolutionary time concept]

12. **Assertion:** Endemic species are more prone to extinction.
Reason: They have a very limited geographical distribution.

Ⓐ A Ⓑ B Ⓒ C Ⓓ D

[**Hint:** Habitat specificity]

13. **Assertion:** In-situ conservation is preferred over ex-situ conservation.
Reason: It conserves the entire ecosystem and evolutionary processes.

Ⓐ A Ⓑ B Ⓒ C Ⓓ D

[**Hint:** Natural habitat advantage]

14. **Assertion:** Alien species invasion is a major cause of biodiversity loss.
Reason: Introduced species always act as predators.

Ⓐ A Ⓑ B Ⓒ C Ⓓ D

15. **Assertion:** Sacred groves help in biodiversity conservation.
Reason: Human interference is minimal in such areas.

Ⓐ A Ⓑ B Ⓒ C Ⓓ D

[**Hint:** Traditional conservation]

Short Answer Type Questions (2 marks)

16. Define beta diversity.
[**Hint:** Species variation between habitats]

17. State any two reasons for greater biodiversity in tropics.
[**Hint:** Climate + time]

18. What is meant by "hotspots of biodiversity"?
[**Hint:** High endemism + threat]

19. Name two consequences of habitat fragmentation.
[**Hint:** Population size + gene flow]

20. What is the significance of keystone species?
[**Hint:** Ecosystem stability]

Short Answer Type Questions (3 marks)

21. Explain the species–area relationship with the help of a graph.

22. Describe any three causes of biodiversity loss.
[**Hint:** Evil quartet]

23. Differentiate between in-situ and ex-situ conservation (any three points).

[**Hint:** Location, examples, scope]

24. Explain the concept of biodiversity hotspots with examples.

[**Hint:** Western Ghats, Himalayas]

25. Give an account of the steps proposed to save the existing species of wildlife?

Long Answer Type Questions

26. Explain the latitudinal gradient in biodiversity.

[**Hint:** Climate stability, speciation, extinction rates]

27. What is the significance of the slope of regression in a species—area relationship?

[**Hint:** Alexander von Humboldt's findings]

28. Discuss in-situ conservation strategies in India.

[**Hint:** National parks, sanctuaries, biosphere reserves]

29. Explain different levels of biodiversity with suitable examples.

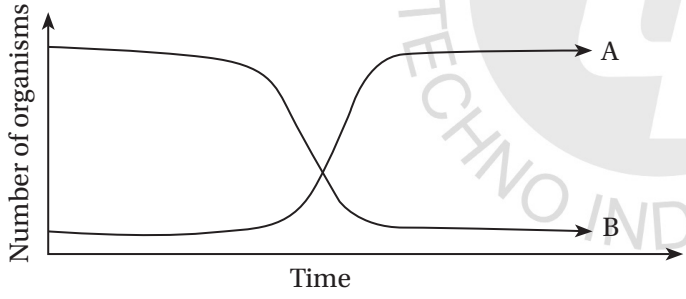
[**Hint:** Genetic, species, ecosystem]

30. The species diversity of plants (22%) is much less than that of animals (72%). What would be the explanation to how animals achieved greater diversity?

[**Hint:** Nervous system—responses to different stimuli—adaptation]

Case-Based Questions

31. Two types of aquatic organisms in a lake show specific growth patterns as shown below, in a brief period of time. The lake is adjacent an agricultural land extensively supplied with fertilisers.



Answer the question based on the facts given above

a) Name the organisms depicting the patterns A and B.

b) State the reason for the growth pattern seen in A.

c) Write the effects of the growth patterns seen above.

32. Introduction of Nile perch into Lake Victoria led to extinction of native fish.

a) Identify the cause of biodiversity loss.

b) Why are alien species successful?

[**Hint:** Lack of predators]

c) Name one Indian example of invasive species.

d) Mention one preventive measure.

[**Hint:** Quarantine laws]

33. Biodiversity Hotspots in India

India has only 2.4% of the world's land area but harbours ~8% of global species. Biologists are always keen on collecting data with respect to species diversity observed in different regions across the world.

a) What does this indicate about India's biodiversity?

b) Name any two biodiversity hotspots in India.

c) Why are hotspots highly vulnerable?

[**Hint:** Human pressure]

d) Mention one strategy to protect hotspots.

ANSWER

1.	Ⓑ	3.	Ⓒ	5.	Ⓒ	7.	Ⓓ	9.	Ⓑ	11.	Ⓐ	13.	Ⓐ	15.	Ⓐ
2.	Ⓒ	4.	Ⓓ	6.	Ⓒ	8.	Ⓒ	10.	Ⓒ	12.	Ⓐ	14.	Ⓒ		