Biodiversity and its Conservation

Standard difficulty · 20 questions · 40 marks · Time: 42 minutes

Name: _____ Date: _____ Score: ____ / 40

Show your working for Sections B and C. Answers are on the last page — try every question first!

Section A — Choose the correct answer — 8 × 1 = 8 marks

1. The term 'biodiversity' was popularised by the sociobiologist:

(a) David Tilman **(b)** Robert May **(c)** Paul Ehrlich **(d)** Edward Wilson

2. Which cause of biodiversity loss is shown by the passenger pigeon hunted to extinction?

(a) over-exploitation **(b)** habitat loss and fragmentation
(c) alien species invasion **(d)** co-extinction

3. Which of these is an ex situ method of conservation?

(a) National parks **(b)** Community reserves
(c) Biosphere reserves **(d)** Wildlife safari parks

4. On a log–log plot, species richness S and area A follow $S = CA^z$ with $Z = 0.2$. A region with 160 species is compared with one 10^5 times larger. The larger region should have about how many species?

(a) 16,000 **(b)** 16,000,000 **(c)** 800 **(d)** 1,600

5. About 1,500,000 species have been described worldwide. A country with 12% of them has about:

(a) 125,000 species **(b)** 18,000 species
(c) 180,000 species **(d)** 1,800,000 species

6. India has about this share of the world's land and of its species diversity:

(a) 2.4% of the land and 8.1% of species **(b)** 1% of the land and 20% of species
(c) 8.1% of the land and 2.4% of species **(d)** 10% of the land and 10% of species

7. The Amazon rain forest has about 125,000 species of invertebrates and 378 species of reptiles. There are about how many times as many species of invertebrates?

(a) 0.003024 **(b)** 329.69 **(c)** 3,306.88 **(d)** 330.69

8. Assertion (A): Tropical regions have more species than temperate regions.
Reason (R): Biodiversity is the same at all latitudes.

(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.

Section B — Short answer — 8 × 2 = 16 marks

9. Name the three levels of biodiversity.

10. For a group of plants, $S = CA^z$ with $C = 16$ and $Z = 0.25$. How many species would an area of 10^8 km^2 hold? What does Z show?

11. India has about 1,200 bird species and New York about 105. How many times as many is that? Give two reasons for the difference.

12. Name the cause of biodiversity loss shown by (i) clearing the Amazon rain forest for soya beans and cattle ranches and (ii) the Nile perch in Lake Victoria wiping out over 200 species of cichlid fish.

13. Is each of these in situ or ex situ conservation: (i) zoological parks; (ii) seed banks? What is the difference?

14. A survey describes 150,000 animal species. If 70% of them are insects, how many are insects and how many are not? Which group of plants and fungi has the most species?

15. In which states are the Sundarbans Biosphere Reserve and the Nilgiri Biosphere Reserve? How do such protected areas help conservation?

16. If 37 species a year would go extinct naturally in a large region, and current rates are 1000 times faster, how many species are lost a year now? What is the sixth extinction?

Section C — Word problems — 4 × 4 = 16 marks

17. Describe the three levels of biodiversity with examples.

18. Explain the four causes of biodiversity loss (the evil quartet), using these examples: clearing the Amazon rain forest for soya beans and cattle ranches; the passenger pigeon hunted to extinction; the African catfish Clarias gariepinus threatening native catfishes; a plant and its only pollinator dying out together.

19. State the species–area relationship and its equation. With C = 18 and Z = 0.5, find S for an area of 10^4 km^2. What are the usual values of Z, and why is Z larger for whole continents?

20. Compare in situ and ex situ conservation, using wildlife sanctuaries and community reserves (in situ) and wildlife safari parks and cryopreservation of gametes (ex situ) as examples. Name India's three biodiversity hotspots.

Want another sheet on this chapter? In the Ambiful Worksheets app every sheet is new, with its answer key, and your child never gets the same question twice.
Scan the code to get the free app, or open **worksheets.ambiful.com/get**

Answer key

Biodiversity and its Conservation · AW-12B-BDC-2026-V1 · For parents — fold back or tear off before handing the sheet to your child.

Q	Answer	Working
1	**(d) Edward Wilson**	—
2	**(a) over-exploitation**	the "evil quartet"
3	**(d) Wildlife safari parks**	in situ: in the natural habitat; ex situ: outside it
4	**(d) 1,600**	the factor is 10^5 to the power 0.2, which is 10^1
5	**(c) 180,000 species**	1,500,000 × 12/100
6	**(a) 2.4% of the land and 8.1% of species**	—
7	**(d) 330.69**	125,000 ÷ 378
8	**(c) A is true, but R is false.**	A is true: species diversity falls from the equator towards the poles. R is false.
9	**Genetic diversity (within a species), species diversity (between species) and ecological diversity (between ecosystems).**	—
10	**S = 16 × 10^2 = 1,600; Z is the slope of the log–log line, which shows how fast species richness rises with area**	(10^8) to the power 0.25 = 10^2
11	**about 11.43 times; places nearer the equator have had more undisturbed evolutionary time, a less seasonal climate and more solar energy, so higher productivity**	1,200 ÷ 105
12	**(i) habitat loss and fragmentation; (ii) alien species invasion**	the evil quartet: habitat loss, over-exploitation, alien species, co-extinction
13	**(i) ex situ; (ii) ex situ. In situ protects species in their natural habitat; ex situ protects them outside it**	—
14	**105,000 insects and 45,000 others; among plants, angiosperms (flowering plants)**	150,000 × 70/100
15	**the Sundarbans Biosphere Reserve: West Bengal; the Nilgiri Biosphere Reserve: Tamil Nadu, Kerala and Karnataka. They protect whole ecosystems in situ, so wild plants and animals survive in their natural habitat**	—
16	**37,000 species a year; the present wave of extinctions, faster than the**	37 × 1000

Q	Answer	Working
	five earlier ones and caused by human activities	
17	**Genetic diversity: a single species can show high diversity at the genetic level; Rauwolfia vomitoria in the Himalaya varies in the amount of reserpine it produces, and India has more than 50,000 strains of rice and 1,000 varieties of mango. Species diversity: the number of species in a region; the Western Ghats have more amphibian species than the Eastern Ghats. Ecological diversity: India's deserts, rain forests, mangroves, coral reefs, wetlands, estuaries and alpine meadows give greater ecosystem diversity than a Scandinavian country such as Norway.**	—
18	**Habitat loss and fragmentation: clearing the Amazon rain forest for soya beans and cattle ranches. Over-exploitation: the passenger pigeon hunted to extinction. Alien species invasion: the African catfish Clarias gariepinus threatening native catfishes. Co-extinction: a plant and its only pollinator dying out together. Habitat loss is the main cause; over-exploitation means taking too much from nature; alien species can spread fast and wipe out natives; when a species dies out, the species that depend on it also die**	—
19	**Humboldt found that species richness rises with area, but only up to a limit. $S = CA^z$, or $\log S = \log C + Z \log A$. $S = 18 \times 10^2 = 1{,}800$. Z is 0.1 to 0.2 for regions within a continent and 0.6 to 1.2 for very large areas such as whole continents, where very different habitats and species come in**	log–log plot gives a straight line of slope Z
20	**In situ conservation protects whole ecosystems in their natural habitat: wildlife sanctuaries, community reserves. Ex situ conservation takes threatened species out of their habitat into special settings: wildlife safari parks, cryopreservation of gametes. India’s hotspots: the Western Ghats and Sri Lanka, Indo-Burma and the Himalaya**	—

Ambiful Worksheets · worksheets.ambiful.com · Not affiliated with CBSE / NCERT