Biodiversity and Conservation

1. **Assertion (A):** Nature's biological library is burning even before we catalogued the titles of all the books stocked there.
Reason (R): Large fraction of biological species faces the threat of becoming extinct even before we discover them.
(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
(3) (A) is true but (R) is false
(4) Both (A) and (R) are false

2. **Assertion (A):** In general, species diversity decreases as we move away from the equator to towards the poles.
Reason (R): From equator to pole x, environment become more constant and predictable.
(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
(3) (A) is true but (R) is false
(4) Both (A) and (R) are false

3. **Assertion (A):** Constant environments promotes greater diversity.
Reason (R): Constant environments promote niche specialization.
(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
(3) (A) is true but (R) is false
(4) Both (A) and (R) are false

4. **Assertion (A):** For species area relationship among very large area like the entire continents value of regression coefficient increase.
Reason (R): Within a region species richness increased with increasing explored area but only up to a limit.
(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
(3) (A) is true but (R) is false
(4) Both (A) and (R) are false

5. **Assertion (A):** Removal of key stone species from any ecosystem leads to destruction of entire ecosystem.
Reason (R): Keystone species drive major ecosystem functions.
(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
(3) (A) is true but (R) is false
(4) Both (A) and (R) are false

6. **Assertion (A):** Habitat loss and fragmentation is one of most important cause among evil quartet.
Reason (R): Habitat is the physical space where all the necessities of life is to be fulfilled.
(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
(3) (A) is true but (R) is false
(4) Both (A) and (R) are false

7. **Assertion (A):** Habitat fragmentation due to human activities is responsible for destruction of biodiversity.
Reason (R): Mammals and birds require large territories.
(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
(3) (A) is true but (R) is false
(4) Both (A) and (R) are false

8. **Assertion (A):** Co-extinction is also one of the evil quartet about biodiversity loss.
Reason (R): When a species become extinct, the plant and animal species, associated with it in facultative way also become extinct.
(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
(3) (A) is true but (R) is false
(4) Both (A) and (R) are false

9. **Assertion (A):** Pollination by pollinator layer is one of the broadly utilitarian service or importance of biodiversity.
Reason (R): These are such valuable services of biodiversity for which one cannot put any price tag.
(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
(3) (A) is true but (R) is false
(4) Both (A) and (R) are false

10. **Assertion (A):** However, when there are situations where an animal or plant is endangered or threatened and needs urgent measure to save it from extinction, ex-situ conservation is the desirable approach.
Reason (R): In ex-situ conservation more extensive/special care and attention can be pay on single endangered or threatened organism.
(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
(3) (A) is true but (R) is false
(4) Both (A) and (R) are false

11. **Assertion (A):** Sacred groves are also one of the mean of ex-situ conservation of biodiversity.
Reason (R): There is de-novo formation of forests, Hills or lakes for conservation of biodiversity in sacred grove category.
(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
(3) (A) is true but (R) is false
(4) Both (A) and (R) are false

12. **Assertion (A):** There are three different zones in a biosphere reserve.
Reason (R): Limited human activity is allowed in core zone.
(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
(3) (A) is true but (R) is false
(4) Both (A) and (R) are false

Directions: In the following questions, a statement of assertion is followed by a statement of reason. Mark the correct choice as:
(a) If both Assertion and Reason are true and Reason is the correct explanation of Assertion.
(b) If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
(c) If Assertion is true but Reason is false.
(d) If both Assertion and Reason are false.

13. **Assertion :** A crop expressing a cry gene is usually resistant to a group of insects.
Reason: Cry proteins produced from Bacillus thuringiensis is toxic to larvae of certain insects.

14. **Assertion:** GMO tomato i.e., 'flavr Savr' has increased shelf life and better nutrient quality.
Reason: This is achieved by reducing the amount of cell wall degrading enzyme 'polygalacturonase' responsible for fruit softening.

15. **Assertion:** Tobacco plant yield is highly reduced because of damage to roots.
Reason: Nematode Meloidogyne incognita infects the root.

16. **Assertion:** Using biotechnology human insulin can be produced into bacterial cells.
Reason: To produce human insulin the A, B and C polypeptides of the human insulin are produced in the bacterial cells, separately extracted and combined by creating disulphide bonds.

17. **Assertion:** Organisations like GEAC are necessary to monitor GM researches and test the safety of introducing gM organisms for public services.
Reason: When genetically modified organisms are introduced into the ecosystem. GM researches can have unpredictable results which even can be disastrous.

18. **Assertion:** In human beings the transgenic food may cause toxicity and product allergy.
Reason: The bacteria present in alimentary canal of human beings may become resistant to the antibiotics by taking up the antibiotic resistant gene that is present in the GM food.

19. **Assertion:** Transgenic mouse is also known as 'super mouse' because it is twice big in size than the normal mouse.
Reason: The gene for human growth factor has been introduced and expressed in 'super mouse'.

20. **Assertion:** To make them tolerant to abiotic stresses many crops are induced with foreign genes.
Reason: Many plant genomes are manipulated or altered by combining them with other genes in order to get desired traits.

21. **Assertion:** Animal antibodies produced in plants are plantibodies.
Reason: Plantibodies are just a theoretical concept.

22. **Assertion:** Bacillus anthracis exemplifies how biotechnology can be used for destructive processes.
Reason: Anthrax bacterium spores were spread via letters in the form of powder.

23. **Assertion :** Protein engineering can be used to produce enzymes at large scale, which is used for synthesis of monoclonal antibodies.
Reason : Monoclonal antibodies are homogeneous immunological reagents.

ANSWER KEY												
Que.	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Ans.	1	3	2	1	1	1	1	3	1	1	4	3

13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.						
B	A	A	C	A	B	A	A	C	B	A						