

Biodiversity and Conservation

1. Among 'The Evil Quartet', which one is considered the most important cause driving extinction of species? **(2023)**
 - (a) Co-extinctions
 - (b) Habitat loss and fragmentation
 - (c) Over exploitation for economic gain
 - (d) Alien species invasions
2. The historic Convention on Biological Diversity, 'The Earth Summit' was held in Rio de Janeiro in the year **(2023)**
 - (a) 2002
 - (b) 1985
 - (c) 1992
 - (d) 1986
3. Which of the following is/are cause(s) of biodiversity losses? **(2023)**
 - (a) Over-exploitation, habitat loss and fragmentation.
 - (b) Climate change only
 - (c) Over-Exploitation only
 - (d) Habitat loss and fragmentation only
4. The 5-C compound formed during TCA cycle is **(2022)**
 - (a) Fumaric acid
 - (b) α -ketoglutaric acid
 - (c) Oxalo succinic acid
 - (d) Succinic acid
5. The World Summit on sustainable development held in 2002 in Johannesburg, South Africa pledged for **(2022)**
 - (a) Collection and preservation of seeds of different genetic strains of commercially important plants.
 - (b) A significant reduction in the current rate of biodiversity loss,
 - (c) Declaration of more biodiversity hotspots.
 - (d) Increase in agricultural production
6. Match List - I with List - II: **(2022)**

List - I	List - II	
a	Sacred groves	(i) Alien species
b	Zoological park	(ii) Release of large quantity of oxygen
c	Nile perch	(iii) Ex-situ conservation

d	Amazon forest	(iv)	Khasi Hills in Meghalaya
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Choose the correct answer from the options given below:

- (a) (a)-(iv), (b)(iii), (c)-(ii), (d)-(i)
- (b) (a)-(iv), (b)(iii), (c) (i), (d) (ii)
- (c) (a)-(ii), (b)(iv), (c)-(i), (d) - (iii)
- (d) (a)-(iv), (b)(i), (c)-(ii), (d) (ii)

7. Frugivorous birds are found in large numbers in tropical forests mainly because of: **(2022)**
 - (a) Temperature conducive for their breeding
 - (b) Lack of niche specialisation
 - (c) Higher annual rainfall
 - (d) Availability of fruits throughout the year
8. Panspermia, an idea that is still a favourite for some astronomers, means: **(2022)**
 - (a) Transfer of spores as unit of life from other planets to Earth
 - (b) Creation of life from dead and decaying matter
 - (c) Creation of life from chemicals
 - (d) Origin of sperm in human testes
9. Why CNG is considered better fuel than diesel?
 - (a) It cannot be adulterated.
 - (b) It takes less time to fill the fuel tank
 - (c) It burns more efficiently.
 - (d) It is cheaper.
 - (e) It is less inflammable.

Choose the most appropriate answer from the options given below: **(2022)**

- (a) (c), (d), (e) only
- (b) (a), (b), (c), (e) only
- (c) (a), (c), (d) only
- (d) (a), (b), (d), (e) only

10. Western Ghats have a large number of plants and animal species that are not found anywhere else. Which of the following term is used to notify such species? **(2022)**
 - (a) Vulnerable species
 - (b) Threatened species
 - (c) Keystone species
 - (d) Endemic species

11. Which of the following are true about the taxonomical aid 'key'?

- (a) Keys are based on the similarities and dissimilarities.
- (b) Key is analytical in nature.
- (c) Keys are based on the contrasting characters in pair called couplet.
- (d) Same key can be used for all taxonomic categories.
- (e) Each statement in the key is called Lead.

Choose the most appropriate answer from the options given below: **(2022)**

- (a) (a), (c), (d) and (e) only
- (b) (a), (b) and (c) only
- (c) (b), (c), and (d) only
- (d) (a), (b), (c) and (e) only

12. Which of the following is not a method of ex situ conservation? **(2023)**

- (a) A In vitro fertilization
- (b) National Parks
- (c) Micropropagation
- (d) Cryopreservation

13. Habitat loss and fragmentation, over exploitation, alien species invasion and co-extinction are causes for: **(2023)**

- (a) Population explosion
- (b) Competition
- (c) Biodiversity loss
- (d) Natality

14. In-situ conservation refers to: **(2023)**

- (a) Protect and conserve the whole ecosystem
- (b) Conserve only high-risk species
- (c) Conserve only endangered species
- (d) Conserve only extinct species

15. Which of the following regions of the globe exhibits highest species diversity? **(2020)**

- (a) Madagascar
- (b) Himalayas
- (c) Amazon forests
- (d) Western ghats of India

16. According to Robert May, the global species diversity is about: **(2020)**

- (a) 20 million
- (b) 50 million
- (c) 7 million
- (d) 1.5 million

17. In the following in each set a conservation approach and an example of method of

conservation are given:

(2020 Covid Re-NEET)

- A. In situ conservation – Biosphere Reserve
- B. Ex situ conservation – Sacred groves
- C. In situ conservation – Seed bank
- D. Ex situ conservation – Cryopreservation

Select the option with correct match of approach and method:

- (a) A and D
- (b) B and D
- (c) A and B
- (d) A and C

18. According to Alexander von Humboldt:

(2020 Covid Re-NEET)

- (a) Species richness increases with increasing area, but only up to limit
- (b) There is no relationship between species richness and area explored
- (c) Species richness goes on increasing with increasing area of exploration
- (d) Species richness decreases with increasing area of exploration

19. Which one of the following is not a method of in situ conservation of biodiversity?

(2019)

- (a) Biosphere Reserve
- (b) Wildlife Sanctuary
- (c) Botanical Garden
- (d) Sacred Grove

20. Which of the following is the most important cause for animals and plants being driven to extinction? **(2019)**

- (a) Habitat loss and fragmentation
- (b) Drought and floods
- (c) Economic exploitation
- (d) Alien species invasion

21. The Earth Summit held in Rio de Janeiro in 1992 was called **(2019)**

- (a) To reduce CO₂ emissions and global warming
- (b) For conservation of biodiversity and sustainable utilization of its benefits
- (c) To assess threat posed to native species by invasive weed species
- (d) For immediate steps to discontinue use of CFCs that were damaging the ozone layer

22. All of the following are included in 'ex-situ conservation' except: **(2018)**

- (a) Wildlife safari parks
- (b) Sacred groves

(c) Botanical gardens
(d) Seed banks

23. Which one of the following is related to ex-situ conservation of threatened animals and plants? **(2017)**
 (a) Wildlife Safari parks
(b) Biodiversity hot spots
(c) Amazon rainforest
(d) Himalayan region

24. Alexander Von Humboldt described for the first time: **(2017)**
 (a) Ecological Biodiversity
(b) Laws of limiting factor
(c) Species area relationships
(d) Population Growth equation

25. Van Mahotsava is a festival of: **(2017)**
 (a) Conservation of sacred groves
(b) Planting trees in open areas
(c) Taking oath to protect trees
(d) Worshipping trees

26. Which scientist proposed 'Rivet popper hypothesis' related to biodiversity and Ecosystem? **(2017)**
 (a) Tansley
(b) Alexander von Humboldt
(c) Paul Ehrlich
(d) David Tilman

27. Tree planting helps in reducing global warming as trees **(2017)**
 (a) Can respire in light
(b) Give out O₂
(c) Create shade thereby cooling the ground
(d) Can sequester CO₂

28. Which of the following National Parks is home to the famous musk deer or hangul? **(2017)**
 (a) Eaglenest Wildlife Sanctuary, Arunachal Pradesh
(b) Dachigam National Park, Jammu & Kashmir
(c) Keibul Lamjao National Park, Manipur
(d) Bandhavgarh National Park, Madhya Pradesh

29. Red list contains data or information on: **(2016-II)**
 (a) Threatened species
(b) Marine vertebrates only
(c) All economically important plants
(d) Plants whose products are in international trade

30. Which of the following is correctly matched? **(2016-II)**
 (a) *Parthenium hysterophorus* – Threat to biodiversity
(b) Stratification – Population
(c) Aerenchyma – *Opuntia*
(d) Age pyramid – Biome

31. Which of the following is correct for r-selected species? **(2016-II)**
 (a) Small number of progeny with small size
(b) Small number of progeny with large size
(c) Large number of progeny with small size
(d) Large number of progeny with large size

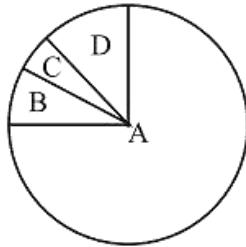
32. How many hot spots of biodiversity in the world have been identified till date by Norman Myers? **(2016-II)**
 (a) 34
(b) 43
(c) 17
(d) 25

33. Which of the following is the most important cause of animals and plants being driven to extinction? **(2016-I)**
 (a) Over-exploitation
(b) Alien species invasion
(c) Habitat loss and fragmentation
(d) Co-extinctions

34. Cryopreservation of gametes of threatened species in viable and fertile condition can be referred to as : **(2015)**
 (a) In situ conservation by sacred groves
(b) In situ cryo-conservation of biodiversity
(c) In situ conservation of biodiversity
(d) Advanced ex-situ conservation of biodiversity

35. In which of the following both pairs have correct combination? **(2015)**
 (a) In situ conservation: Seed Bank
Ex situ conservation: National Park
(b) In situ conservation: Tissue culture
Ex situ conservation: Sacred groves
(c) In situ conservation: National Park
Ex situ conservation: Botanical Garden
(d) In situ conservation: Cryopreservation
Ex situ conservation: Wildlife Sanctuary

36. The species confined to a particular region and not found elsewhere is termed as: **(2015 Re)**
 (a) Alien
(b) Endemic
(c) Rare

<p>(d) Keystone</p> <p>37. An example of ex situ conservation is: (2014)</p> <p>(a) Sacred Grove (b) National Park (c) Seed Bank (d) Wildlife Sanctuary</p>	<p>39. A species facing extremely high risk of extinction in the immediate future is called: (2014)</p> <p>(a) Extinct (b) Vulnerable (c) Endemic (d) Critically Endangered</p>																									
<p>38. Given below is the representation of the extent of global diversity of invertebrates. What groups the four portions (A-D) represent respectively? (2014)</p>	<p>40. The organization which publishes the Red List of species is: (2014)</p> <p>(a) WWF (b) ICFRE (c) IUCN (d) UNEP</p>																									
	<p>41. Which one of the following is not used for ex-situ plant conservation? (2013)</p> <p>(a) Botanical Gardens (b) Field gene banks (c) Seed banks (d) Shifting cultivation</p>																									
<table border="1" data-bbox="150 875 770 1313"> <thead> <tr> <th></th> <th>A</th> <th>B</th> <th>C</th> <th>D</th> </tr> </thead> <tbody> <tr> <td>(a)</td> <td>Insects</td> <td>Molluscs</td> <td>Crustaceans</td> <td>Other animal groups</td> </tr> <tr> <td>(b)</td> <td>Insects</td> <td>Crustaceans</td> <td>Other animal groups</td> <td>Molluscs</td> </tr> <tr> <td>(c)</td> <td>Crustaceans</td> <td>Insects</td> <td>Molluscs</td> <td>Other animal groups</td> </tr> <tr> <td>(d)</td> <td>Molluscs</td> <td>Other animal groups</td> <td>Crustaceans</td> <td>Insects</td> </tr> </tbody> </table>		A	B	C	D	(a)	Insects	Molluscs	Crustaceans	Other animal groups	(b)	Insects	Crustaceans	Other animal groups	Molluscs	(c)	Crustaceans	Insects	Molluscs	Other animal groups	(d)	Molluscs	Other animal groups	Crustaceans	Insects	<p>42. Which of the following represent maximum number of species among global biodiversity? (2013)</p> <p>(a) Mosses and Ferns (b) Algae (c) Lichens (d) Fungi</p>
	A	B	C	D																						
(a)	Insects	Molluscs	Crustaceans	Other animal groups																						
(b)	Insects	Crustaceans	Other animal groups	Molluscs																						
(c)	Crustaceans	Insects	Molluscs	Other animal groups																						
(d)	Molluscs	Other animal groups	Crustaceans	Insects																						

Answer Key

S1. Ans. (b)	S32. Ans. (a)
S2. Ans. (c)	S33. Ans. (c)
S3. Ans. (a)	S34. Ans. (c)
S4. Ans. (b)	S35. Ans. (c)
S5. Ans. (b)	S36. Ans. (b)
S6. Ans. (b)	S37. Ans. (c)
S7. Ans. (d)	S38. Ans. (a)
S8. Ans. (a)	S39. Ans. (d)
S9. Ans. (c)	S40. Ans. (c)
S10. Ans. (d)	S41. Ans. (d)
S11. Ans. (d)	S42. Ans. (d)
S12. Ans. (b)	
S13. Ans. (c)	
S14. Ans. (a)	
S15. Ans. (c)	
S16. Ans. (c)	
S17. Ans. (a)	
S18. Ans. (a)	
S19. Ans. (c)	
S20. Ans. (a)	
S21. Ans. (b)	
S22. Ans. (b)	
S23. Ans. (a)	
S24. Ans. (c)	
S25. Ans. (b)	
S26. Ans. (c)	
S27. Ans. (d)	
S28. Ans. (b)	
S29. Ans. (a)	
S30. Ans. (a)	
S31. Ans. (c)	

Solutions

<p>S1. Ans.(b) Habitat loss and fragmentation is the most important cause driving animals and plants to extinction.</p> <p>S2. Ans.(c) The historic convention on Biological Diversity, "The Earth Summit" was held in Rio de Janeiro in the year 1992. It called upon all nations to take appropriate measures for conservation of biodiversity and sustainable utilisation of its benefits.</p> <p>S3. Ans.(a) Over-exploitation, habitat loss and fragmentation.</p> <p>S4. Ans.(b) In TCA cycle, the intermediate which is a 5-C compound is α-ketoglutaric acid. Oxalo succinic acid is a 6-C compound, whereas succinic acid and fumaric are 4-C compounds.</p> <p>S5. Ans.(b) In the World Summit on sustainable development held in 2002 in Johannesburg, South Africa, 190 countries pledged their commitment to achieve by 2010, a significant reduction in the current rate of biodiversity loss at global, regional and local levels.</p> <p>S6. Ans.(b) Khasi Hills in Meghalaya are sacred groves. Zoological Park is an ex-situ conservation strategy. Amazon forest releases large quantity of O_2. Nile perch is an alien species.</p> <p>S7. Ans.(d) Frugivorous birds are fruit eating birds found in large number in tropical forest mainly because of availability of fruits throughout the year.</p>	<p>S8. Ans.(a) Option (a) is the correct answer because some scientists believe that life came from outside. Early Greek thinkers thought units of life called spores were transferred to different planets including earth. This transfer of spores was termed Panspermia.</p> <p>S9. Ans.(c) CNG is better fuel than diesel and petrol because <ul style="list-style-type: none"> (1) It burns more efficiently than diesel or petrol (2) It is cheaper (3) It cannot be adulterated </p> <p>S10. Ans.(d) Endemic species are those species which are confined to a particular area, such as, species found in Western Ghats are not found anywhere else.</p> <p>S11. Ans.(d) Key is taxonomical aid used for identification of plants and animals based on the similarities and dissimilarities. The keys are based on the contrasting characters generally in a pair called couplet. Each statement in the key is called a lead. Separate taxonomic keys are required for each taxonomic category such as family, genus and species for identification purposes. Keys are generally analytical in nature.</p> <p>S12. Ans.(b) In-situ conservation means on site conservation i.e. when we conserve and protect the whole ecosystem, its biodiversity at all levels is protected. National parks are type of in-situ conservation. Whereas, micropropagation, cryopreservation and in-vitro fertilization are methods of ex-situ conservation.</p>
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S13. Ans.(c)
Habitat loss and fragmentation, over exploitation, alien species invasion and co-extinction are causes for biodiversity loss.

S14. Ans.(a)
When we conserve and protect the whole ecosystem, its biodiversity at all levels is protected. This is in-situ or on site conservation strategy.

S15. Ans.(c)
The Amazonian rain forest in south America, which is mostly tropical, has the world's greatest biodiversity.

S16. Ans.(c)
According to Robert May, the world's species diversity is estimated to be around 7 million.

S17. Ans.(a)
Ex-situ conservation is the preservation of biological diversity components outside of their natural habitats. It is accomplished through the preservation of genetic resources, as well as wild and cultivated species. Cryopreservation, gene banks, zoological parks, botanical gardens, and wildlife safari parks are just a few examples.
Conservation of species in their natural habitats is known as in situ conservation. It is most effective means of preserving biodiversity. Sacred grooves, biosphere reserves, national parks, and sanctuaries are some examples.

S18. Ans.(a)
Within a region, Alexander von Humboldt discovered that species richness increased with increasing explored area, but only up to a point.

S19. Ans.(c)
Botanical gardens are an example of ex-situ (off-site) conservation, in which living plants (flora) are preserved in a human-managed environment.

S20. Ans.(a)

The most important factor driving animals and plants to extinction is habitat loss and fragmentation. For example, the loss of tropical rainforest has reduced forest cover from 14% to 6%.

S21. Ans.(b)
All nations were urged to take appropriate measures for biodiversity conservation and sustainable use of its benefits at the 1992 Earth Summit in Rio de Janeiro.

S22. Ans.(b)
Sacred groves are communally protected forest fragments of various sizes. It exemplifies in-situ conservation.

S23. Ans.(a)
Ex-situ conservation refers to the preservation of organisms outside of their natural habitats. Genetic resource centres, zoological parks, botanical gardens, gene banks, and other institutions are examples.

S24. Ans.(c)
Within a region, species richness increases with increasing explored area, but only up to a point, according to Alexander von Humboldt's (German naturalist and geographer) study in south American jungles. For a wide range of taxa, the relationship between species richness and area yields a rectangular hyperbola.

S25. Ans.(b)
Van Mahotsava is a festival aimed at igniting public interest in forest conservation and tree planting.

S26. Ans.(c)
It is a hypothesis that describes the conditions of an ecosystem in which the loss of a substantial number of species has an impact on the functions and variety of an ecological community. Paul Ehrlich proposed this idea, using an aeroplane to explain the ecosystem and the passengers as the ecosystem's rivet. Because communities are made up of

relatively specialized species with limited ability to compensate for one another, the disappearance of a certain species is critical to the ecosystem's functionality. The rate of extinction has an impact on the ecological unit's entire function. According to the Rivet hypothesis, each species loss to an ecological unit can reduce ecosystem services, however the decline is gradual as more species are gone. Any loss of diversity is immediately visible in this illustration.

S27. Ans.(d)
Trees sequester CO₂ directly in their stems and leaves as they grow.

S28. Ans.(b)
The famous musk deer or hangul can be found in Jammu & Kashmir's Dachigam National Park.

S29. Ans.(a)
In the last 500 years, the IUCN Red List records the extinction of 784 species (including 338 vertebrates, 359 invertebrates, and 87 plants).

S30. Ans.(a)
Carrot grass (Parthenium), Lantana, and water hyacinth (Eichhornia) are invasive weed species that pose a threat to our native species.

S31. Ans.(c)
For r-selected species, a large number of progeny of small size is appropriate.

S32. Ans.(a)
Initially, 25 biodiversity hotspots were identified, but 9 more have since been added, bringing the total number of biodiversity hotspots worldwide to 34.

S33. Ans.(c)
The most critical factor driving animals and plants to extinction is habitat loss and fragmentation. Tropical rain forests provide the most severe examples of habitat loss.

S34. Ans.(c)

Ex-situ conservation has come a long way in recent years. Keeping endangered species in enclosures is a good idea. Cryopreservation procedures can be used to preserve the gametes of endangered species.

S35. Ans.(c)
Ex situ conservation – zoological parks, botanical gardens, and animal safari parks, seed banks, and so on; in situ conservation-hotspots, biosphere reserves, national parks, and sanctuaries.

S36. Ans.(b)
Endemic species are species that can only be found in a certain natural habitat and are not found elsewhere.

S37. Ans.(c)
Ex-situ zoological park, botanical gardens, and seed collection banks.

S38. Ans.(a)
Insects are A, mollusks are B, crustaceans are C, and other animals are D.

S39. Ans.(d)
Critically endangered species are those that are in grave danger of extinction. Extinction in the not-too-distant future.

S40. Ans.(c)
The Red List of species is published by the IUCN.

S41. Ans.(d)
Deforestation occurs as a result of shifting farming.

S42. Ans.(d)
The overall number of fungal species in the globe exceeds the total number of fish, amphibians, reptiles, and mammals combined.