

Biodiversity and Conservation — NEET Biology PYQ (2005-2020)

Class 12 Biology · 41 real NEET & AIPMT questions, year-tagged · answers checked by RankUp

NEET 2020 · Q32

1. According to Robert May, the global species diversity is about:

- (A) 1.5 million
- (B) 20 million
- (C) 50 million
- (D) 7 million

NEET 2020 · Q34

2. Which of the following regions of the globe exhibits highest species diversity?

- (A) Western Ghats of India
- (B) Madagascar
- (C) Himalayas
- (D) Amazon forests

NEET 2019 · Q91

3. The Earth Summit held in Rio de Janeiro in 1992 was called :

- (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.

NEET 2019 · Q98

4. Which of the following is the most important cause for animals and plants being driven to extinction ?

- (A) Habitat loss and fragmentation
- (B) Drought and floods
- (C) Economic exploitation
- (D) Alien species invasion

NEET 2019 · Q106

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

- (A) Biosphere Reserve
- (B) Wildlife Sanctuary
- (C) Botanical Garden
- (D) Sacred Grove

NEET 2018 · Q154

6. All of the following are included in 'Ex-situ conservation' except

- (A) Botanical gardens
- (B) Sacred groves
- (C) Wildlife safari parks
- (D) Seed banks

NEET 2017 · Q47

7. Which one of the following is related to Ex-situ conservation of threatened animals and plants?

- (A) Wildlife Safari parks
- (B) Biodiversity hot spots
- (C) Amazon rainforest
- (D) Himalayan region

NEET 2017 · Q75

8. Alexander Von Humbolt described for the first time:

- (A) Ecological Biodiversity
- (B) Laws of limiting factor
- (C) Species area relationships
- (D) Population Growth equation

NEET 2017 (Gujarati paper) · Q117

9. Which scientist proposed 'Rivet popper hypothesis' related to biodiversity and Ecosystems?

- (A) Alexander von Humboldt
- (B) Paul Ehrlich
- (C) David Tilman
- (D) Tansley

NEET 2016 Phase 2 · Q134

10. Which of the following is correctly matched?

- (A) Aerenchyma—Opuntia
- (B) Age pyramid—Biome
- (C) Parthenium hysterophorus—Threat to biodiversity
- (D) Stratification—Population

NEET 2016 Phase 2 · Q135

11. Red List contains data or information on

- (A) all economically important plants
- (B) plants whose products are in international trade
- (C) threatened species
- (D) marine vertebrates only

NEET 2016 Phase 1 · Q106

12. Which is the National Aquatic Animal of India?

- (A) Gangetic shark
- (B) River dolphin
- (C) Blue whale
- (D) Sea - horse

NEET 2016 Phase 1 · Q120

13. Which of the following is the most important cause of animals and plants being driven to extinction?

- (A) Over - exploitation
- (B) Alien species invasion
- (C) Habitat loss and fragmentation
- (D) Co - extinctions

AIPMT 2015

14. Cryopreservation of gametes of threatened species in viable and fertile condition can be referred to as:

- (A) In situ cryoconservation of biodiversity
- (B) In situ conservation of biodiversity
- (C) Advanced ex situ conservation of biodiversity
- (D) In situ conservation by sacred groves

AIPMT 2015

15. In which of the following both pairs have correct combination?

- (A) In situ conservation: Tissue culture Ex situ conservation: Sacred groves
- (B) In situ conservation: National Park Ex situ conservation: Botanical Garden
- (C) In situ conservation: Cryopreservation Ex situ conservation: Wildlife Sanctuary
- (D) In situ conservation: Seed Bank Ex situ conservation: National Park

AIPMT 2015

16. Most animals are tree dwellers in a:

- (A) tropical rain forest
- (B) coniferous forest
- (C) thorn woodland
- (D) temperate deciduous forest

AIPMT 2014

17. Just as a person moving from Delhi to Shimla to escape the heat for the duration of hot summer, thousands of migratory birds from Siberia and other extremely cold northern regions move to:

- (A) Meghalaya
- (B) Corbett National Park
- (C) Keoladeo National Park
- (D) Western Ghat

AIPMT 2014

18. A species facing extremely high risk of extinction in the immediate future is called:

- (A) Endemic
- (B) Critically Endangered
- (C) Extinct
- (D) Vulnerable

AIPMT 2014

19. An example of ex situ conservation is:

- (A) Seed Bank
- (B) Wildlife Sanctuary
- (C) Sacred Grove
- (D) National Park

AIPMT 2014

20. The organization which publishes the Red List of species is:

- (A) IUCN
- (B) UNEP
- (C) WWF
- (D) ICFRE

NEET 2013

21. Which one of the following is not used for ex situ plant conservation?

- (A) Field gene banks
- (B) Seed banks
- (C) Shifting cultivation
- (D) Botanical Gardens

NEET 2013

22. Which of the following represent maximum number of species among global biodiversity?

- (A) Algae
- (B) Lichens
- (C) Fungi
- (D) Mosses and Ferns

AIPMT 2012 Mains

23. Sacred groves are specially useful in

- (A) generating environmental awareness
- (B) preventing soil erosion
- (C) year-round flow of water in rivers
- (D) conserving rare and threatened species

AIPMT 2012 Mains

24. Select the correct statement about biodiversity :

- (A) The desert areas of Rajasthan and Gujarat have a very high level of desert animal species as well as numerous rare animals
- (B) Large scale planting of Bt cotton has no adverse effect on biodiversity
- (C) Western Ghats have a very high degree of species richness and endemism
- (D) Conservation of biodiversity is just a fad pursued by the developed countries

AIPMT 2012 Prelims

25. Which one of the following areas in India, is a hotspot of biodiversity ?

- (A) Western Ghats
- (B) Eastern Ghats
- (C) Gangetic Plain
- (D) Sunderbans

AIPMT 2012 Prelims

26. The highest number of species in the world is represented by

- (A) Lichens
- (B) Fungi
- (C) Mosses
- (D) Algae

AIPMT 2011 Mains

27. Biodiversity of a geographical region represents

- (A) Genetic diversity present in the dominant species of the region
- (B) Species endemic to the region
- (C) Endangered species found in the region
- (D) The diversity in the organisms living in the region

AIPMT 2011 Prelims

28. Which one of the following have the highest number of species in nature?

- (A) Angiosperms
- (B) Fungi
- (C) Insects
- (D) Birds

AIPMT 2010 Mains · Q37

29. The Indian Rhinoceros is a natural inhabitant of which one of the Indian states?

- (A) Uttarakhand
- (B) Uttar Pradesh
- (C) Himachal Pradesh
- (D) Assam

AIPMT 2010 Prelims · Q172

30. Which one of the following is an example ex-situ conservation?

- (A) National park
- (B) Wildlife sanctuary
- (C) Seed bank
- (D) Sacred groves

AIPMT 2009 Prelims · Q81

31. Which one of the following has maximum genetic diversity in India?

- (A) Mango
- (B) Wheat
- (C) Tea
- (D) Teak

AIPMT 2009 Prelims · Q85

32. Tiger is not a resident in which one of the following national park?

- (A) Sunderbans
- (B) Gir
- (C) Jim Corbett
- (D) Ranthambhor

AIPMT 2008 Prelims · Q172

33. Which one of the following is not observed in biodiversity hotspots?

- (A) Species richness
- (B) Endemism
- (C) Accelerated species loss
- (D) Lesser inter-specific competition

AIPMT 2007 Prelims · Q104

34. Identify the odd combination of the habitat and the particular animal concerned.

- (A) Sunderbans - Bengal Tiger
- (B) Periyar - Elephant
- (C) Rann of Kutch - Wild Ass
- (D) Dachigam National Park - Snow Leopard

AIPMT 2007 Prelims · Q113

35. One of endangered species of Indian medicinal plants is that of

- (A) Ocimum
- (B) garlic
- (C) Nepenthes
- (D) Podophyllum

AIPMT 2007 Prelims · Q188

36. Which one of the following pairs of organisms are exotic species introduced in India?

- (A) Lantana camara, water hyacinth
- (B) water hyacinth, Prosopis cineraria
- (C) Nile perch, Ficus religiosa
- (D) Ficus religiosa, Lantana camara

AIPMT 2006 Prelims · Q121

37. Which one of the following is not included under in situ conservation ?

- (A) Sanctuary
- (B) Botanical garden
- (C) Biosphere reserve
- (D) National park

AIPMT 2006 Prelims · Q160

38. Which of the following is considered a hot-spot of biodiversity in India ?

- (A) Western ghats
- (B) Indo-Gangetic plain
- (C) Eastern ghats
- (D) Aravalli hills

AIPMT 2005 Prelims · Q127

39. According to IUCN red list what is the status of red Panda (*Ailurus fulgens*) ?

- (A) Vulnerable species
- (B) Critically endangered species
- (C) Extinct species
- (D) Endangered species

40. One of the most important functions of botanical gardens is that :

- (A) one can observe tropical plants there
- (B) they allow ex situ conservation of germplasm
- (C) they provide the natural habitat for wild life
- (D) they provide a beautiful area for recreation

41. Biodiversity act of India was passed by the Parliament in the year :

- (A) 1996
- (B) 1992
- (C) 2002
- (D) 2000

Answer key and explanations

1. Answer: (D) 7 million

Robert May's estimate of global species diversity is about 7 million. About 1.5 million is the number of species actually described, and 20 or 50 million are higher estimates by others, not his figure.

2. Answer: (D) Amazon forests

The tropical Amazon rainforest has the highest species diversity on Earth, for example over 40,000 species of plants and thousands of fishes, birds and insects. The Western Ghats, Madagascar and the Himalayas are rich hotspots but have fewer species than the Amazon.

3. Answer: (B) for conservation of biodiversity and sustainable utilization of its benefits.

The 1992 Earth Summit in Rio de Janeiro called upon all nations to take measures for conservation of biodiversity and sustainable utilisation of its benefits (Convention on Biological Diversity). CO₂ reduction targets came with the Kyoto Protocol, and phasing out CFCs was the aim of the Montreal Protocol.

4. Answer: (A) Habitat loss and fragmentation

Habitat loss and fragmentation is the most important cause of biodiversity loss among the 'Evil Quartet'. Alien species invasion and over-exploitation are real causes but contribute less.

5. Answer: (C) Botanical Garden

A botanical garden keeps plants away from their natural habitat, so it is ex situ conservation. Biosphere reserves, wildlife sanctuaries and sacred groves protect species in their natural habitat.

6. Answer: (B) Sacred groves

Sacred groves are tracts of natural forest protected by local communities, so species are conserved in their own habitat; this is in-situ conservation. Botanical gardens, wildlife safari parks and seed banks keep organisms or germplasm away from their natural habitat and are ex-situ methods.

7. Answer: (A) Wildlife Safari parks

Ex-situ conservation protects threatened species outside their natural habitat, in places such as zoos, botanical gardens and wildlife safari parks. Biodiversity hotspots, the Amazon rainforest and the Himalayan region are natural habitats, so protecting them is in-situ conservation.

8. Answer: (C) Species area relationships

During his explorations of South America Alexander von Humboldt observed that species richness rises with the area explored, the species-area relationship ($\log S = \log C + Z \log A$). The law of limiting factors comes from Liebig and Blackman, not Humboldt.

9. Answer: (B) Paul Ehrlich

Stanford ecologist Paul Ehrlich proposed the rivet popper hypothesis, comparing species in an ecosystem to rivets in an aeroplane. Humboldt described species-area relationships and David Tilman showed that plots with more species have more stable productivity.

10. Answer: (C) Parthenium hysterophorus—Threat to biodiversity

Parthenium (carrot grass) is an invasive alien weed that spreads aggressively and threatens native species. Aerenchyma is a feature of hydrophytes, not the xerophyte Opuntia, age pyramids describe populations and stratification describes the vertical layering of a community.

11. Answer: (C) threatened species

The IUCN Red List records the conservation status of plant and animal species, mainly those that are threatened with extinction. It is not limited to economically important or traded plants, or to marine vertebrates.

12. Answer: (B) River dolphin

The Gangetic river dolphin (*Platanista gangetica*) was declared India's National Aquatic Animal in 2009 to promote its conservation. The other animals have no such status.

13. Answer: (C) Habitat loss and fragmentation

Of the 'evil quartet', habitat loss and fragmentation is the most important cause of species extinction, as seen with tropical rainforest clearing. Over-exploitation, alien species and co-extinctions also contribute but to a lesser extent.

14. Answer: (C) Advanced ex situ conservation of biodiversity

Keeping gametes of threatened species frozen and viable for long periods is cryopreservation, which is done away from the natural habitat, so it is an advanced ex situ method. In situ methods, such as sacred groves, protect species where they live.

15. Answer: (B) In situ conservation: National Park Ex situ conservation: Botanical Garden

A national park protects species in their natural habitat (in situ), while a botanical garden keeps plants away from their habitat (ex situ). Tissue culture, cryopreservation and seed banks are ex situ, and sacred groves, wildlife sanctuaries and national parks are in situ, so the other pairs are swapped.

16. Answer: (A) tropical rain forest

Tropical rain forests have a tall, dense, many-layered canopy that provides most of the food and shelter, so most animals there are arboreal. Coniferous forests, thorn woodlands and temperate deciduous forests have more open or seasonal canopies and more ground-dwelling fauna.

17. Answer: (C) Keoladeo National Park

Siberian cranes and many other migratory waterbirds from cold northern regions spend the winter at Keoladeo National Park (Bharatpur, Rajasthan), a wetland famous as a wintering ground. Corbett National Park is a tiger reserve and the Western Ghats and Meghalaya are noted for endemic flora and fauna, not as this classic migratory-bird refuge.

18. Answer: (B) Critically Endangered

In IUCN categories a 'Critically Endangered' species faces an extremely high risk of extinction in the wild in the immediate future. 'Vulnerable' means a high risk in the medium-term future, 'Endemic' only means restricted to one region, and 'Extinct' species no longer exist.

19. Answer: (A) Seed Bank

A seed bank stores germplasm away from the species' natural habitat, so it is ex situ conservation. Wildlife sanctuaries, national parks and sacred groves protect organisms in their natural habitat (in situ).

20. Answer: (A) IUCN

The Red List (Red Data Book) of threatened species is published by the IUCN, the International Union for Conservation of Nature and Natural Resources. UNEP, WWF and ICFRE do not publish it.

21. Answer: (C) Shifting cultivation

Shifting (slash-and-burn) cultivation clears forest and destroys biodiversity, so it is not a conservation method. Field gene banks, seed banks and botanical gardens all keep plants away from their natural habitat, which is ex situ conservation.

22. Answer: (C) Fungi

In the global species distribution of plants, fungi form a larger share than algae, lichens, or mosses and ferns combined. Among the options, fungi therefore represent the largest number of species.

23. Answer: (D) conserving rare and threatened species

Sacred groves are forest patches protected by religious tradition, and they act as refuges for many rare and threatened species, a form of in situ conservation. Benefits such as soil protection are side effects, not their special value.

24. Answer: (C) Western Ghats have a very high degree of species richness and endemism

The Western Ghats are a biodiversity hotspot with very high species richness and many endemic species, especially amphibians and plants. Deserts have low diversity, and biodiversity conservation is a global need, not a fad.

25. Answer: (A) Western Ghats

The Western Ghats (with Sri Lanka) is one of the global biodiversity hotspots in India, alongside the Himalaya and Indo-Burma. The Eastern Ghats, Gangetic plain and Sunderbans are not hotspots.

26. Answer: (B) Fungi

Of the groups listed, fungi have by far the most described species; they are the largest group after insects in the global species count. Algae, mosses and lichens each have far fewer species.

27. Answer: (D) The diversity in the organisms living in the region

Biodiversity of a region is the total variety of all organisms living there, at genetic, species and ecosystem levels. Endemic, endangered or dominant species are only parts of that diversity.

28. Answer: (C) Insects

Insects account for more than 70 percent of all recorded animal species, far more than any other group. Angiosperms and fungi have far fewer described species, and birds number only around ten thousand species.

29. Answer: (D) Assam

The one-horned Indian rhinoceros lives naturally in the floodplain grasslands of Assam, especially Kaziranga National Park, which holds most of the world's population. The other states are not its natural range.

30. Answer: (C) Seed bank

Ex-situ conservation protects species outside their natural habitat, for example in seed banks, zoos, botanical gardens and cryopreservation. National parks, wildlife sanctuaries and sacred groves protect species where they naturally live, so they are in-situ.

31. Answer: (A) Mango

NCERT gives genetic diversity examples for India: more than 50,000 strains of rice and about 1,000 varieties of mango. Of the listed plants, mango is the one cited for very high genetic diversity in India; wheat is not given as an example.

32. Answer: (B) Gir

Gir National Park in Gujarat is the home of the Asiatic lion and has no resident tigers. Sunderbans, Jim Corbett and Ranthambhore are tiger reserves.

33. Answer: (D) Lesser inter-specific competition

Hotspots are defined by very high species richness, high endemism and severe threat of habitat and species loss. With so many species packed together, interspecific competition is high, not low.

34. Answer: (D) Dachigam National Park - Snow Leopard

Dachigam National Park in Kashmir is known for protecting the Hangul (Kashmir stag), not the snow leopard. The Sunderbans are famous for the Bengal tiger, Periyar for elephants and the Rann of Kutch for the Indian wild ass, so those pairs are correct.

35. Answer: (D) Podophyllum

Podophyllum (Himalayan mayapple) is a medicinal herb that has become endangered through over-harvesting of its rhizomes for drugs. Ocimum (tulsi) and garlic are widely cultivated, and Nepenthes is an insectivorous plant rather than a medicinal one.

36. Answer: (A) Lantana camara, water hyacinth

Lantana camara and water hyacinth (Eichhornia) were brought into India from the Americas and have become invasive alien weeds. Prosopis cineraria (khejri) and Ficus religiosa (peepal) are native Indian plants.

37. Answer: (B) Botanical garden

In situ conservation protects species in their natural habitat, such as national parks, sanctuaries and biosphere reserves. A botanical garden holds plants away from their natural habitat, so it is ex situ conservation.

38. Answer: (A) Western ghats

The Western Ghats (with Sri Lanka) is one of the global biodiversity hotspots in India because of its high species richness and endemism. The Indo-Gangetic plain and Aravalli hills are not hotspots.

39. Answer: (D) Endangered species

The red panda of the eastern Himalayas is listed as Endangered by the IUCN because of habitat loss and poaching. It is not extinct and has not been placed in the critically endangered category.

40. Answer: (B) they allow ex situ conservation of germplasm

Botanical gardens keep living plant collections away from their natural habitats, which makes them a key means of ex situ conservation of germplasm. Providing natural habitat for wildlife is in situ conservation (national parks, sanctuaries).

41. Answer: (C) 2002

India's Biological Diversity Act was passed in 2002, after the 1992 Convention on Biological Diversity (Rio Earth Summit). 1992 is the year of the convention, not of the Indian Act.

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