

DPP - Daily Practice Problems

Chapter-wise Sheets

Date :

Start Time :

End Time :

BIOLOGY

CB37

SYLLABUS : Biodiversity and its conservation

Max. Marks : 180

Marking Scheme : + 4 for correct & (–1) for incorrect

Time : 60 min.

INSTRUCTIONS : This Daily Practice Problem Sheet contains 45 MCQ's. For each question only one option is correct. Darken the correct circle/ bubble in the Response Grid provided on each page.

- Which one of the following is not included under *in-situ* conservation ?
(a) Botanical garden
(b) Biosphere reserve
(c) National park
(d) Sanctuary
- Biodiversity Act of India was passed by the parliament in the year
(a) 1992
(b) 1996
(c) 2000
(d) 2002
- Biodiversity of a geographical region represents
(a) endangered species found in the region.
(b) the diversity in the organisms living in the region.
(c) genetic diversity present in the dominant species of the region.
(d) species endemic to the region.
- Which animal has become extinct from India?
(a) Snow Leopard
(b) Hippopotamus
(c) Wolf
(d) Cheetah
- Which of the following is considered a hot-spot of biodiversity in India ?
(a) Indo-Gangetic Plain
(b) Eastern Ghats
(c) Aravalli Hills
(d) Western Ghats
- Which group of vertebrates comprises the highest number of endangered species ?
(a) Birds
(b) Mammals
(c) Fishes
(d) Reptiles
- One of endangered species of Indian medicinal plants is that of
(a) *Ocimum*
(b) Garlic
(c) *Nepenthes*
(d) *Podophyllum*
- Which one of the following is the correct matched pair of an endangered animal and National Park ?
(a) Rhinoceros - Kaziranga National Park
(b) Wild Ass - Dudhwa National Park
(c) Great Indian - Keoladeo National Park
(d) Lion - Corbett National Park

**RESPONSE
GRID**

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|--|--|--|--|--|
| 1. <input type="radio"/> a <input type="radio"/> b <input type="radio"/> c <input type="radio"/> d | 2. <input type="radio"/> a <input type="radio"/> b <input type="radio"/> c <input type="radio"/> d | 3. <input type="radio"/> a <input type="radio"/> b <input type="radio"/> c <input type="radio"/> d | 4. <input type="radio"/> a <input type="radio"/> b <input type="radio"/> c <input type="radio"/> d | 5. <input type="radio"/> a <input type="radio"/> b <input type="radio"/> c <input type="radio"/> d |
| 6. <input type="radio"/> a <input type="radio"/> b <input type="radio"/> c <input type="radio"/> d | 7. <input type="radio"/> a <input type="radio"/> b <input type="radio"/> c <input type="radio"/> d | 8. <input type="radio"/> a <input type="radio"/> b <input type="radio"/> c <input type="radio"/> d | | |

Space for Rough Work

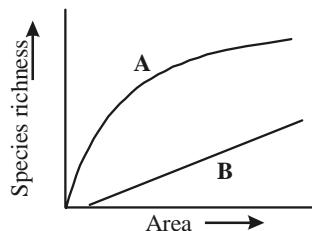
9. The area where wild populations, traditional life styles and genetic resources are protected is :
 (a) Core Zone
 (b) Buffer Zone
 (c) Biosphere reserve
 (d) Manipulation Zone
10. Which one of the following species of plant is considered as the world's most problematic aquatic weed?
 (a) *Lantana*
 (b) *Eichhornia*
 (c) *Parthenium* (carrot grass)
 (d) Brown algae
11. Which one of the following is not observed in biodiversity hotspots ?
 (a) Endemism
 (b) Accelerated species loss
 (c) Lesser inter-specific competition
 (d) Species richness
12. Which one of the following shows maximum genetic diversity in India ?
 (a) Groundnut (b) Rice
 (c) Maize (d) Mango
13. Study the four statements (i–iv) given below and select the two correct ones out of them:
 (i) A lion eating a deer and a sparrow feeding on grain are ecologically similar in being consumers
 (ii) Predator star fish *Pisaster* helps in maintaining species diversity of some invertebrates
 (iii) Predators ultimately lead to the extinction of prey species
 (iv) Production of chemicals such as nicotine, strychnine by the plants are metabolic disorders
 The two correct statements are:
 (a) (ii) and (iii) (b) (iii) and (iv)
 (c) (i) and (iv) (d) (i) and (ii)
14. Reason of diversity in living beings is due to
 (a) mutation
 (b) long term evolutionary change
 (c) gradual change
 (d) short term evolutionary change
15. Which of the following is a reason for the greater biological diversity of tropical regions?
 (a) Tropical latitudes have remained almost undisturbed for millions of years.
 (b) Tropical environments are less seasonal, relatively more constant and predictable.
 (c) More solar energy is available in the tropics resulting in high productivity.
 (d) All of these.
16. An exotic species that is introduced to a new area, spreads rapidly and eliminates native species is called
 (a) immigrant species
 (b) invasive species
 (c) *Eichhornia crassipes*
 (d) all of these
17. Characters of stable community are
 (a) it should not show too much variations in year-to-year productivity.
 (b) it must be resistant to occasional natural or man-made disturbances.
 (d) it should be resistant to invasions by alien species.
 (d) All of these
18. What is the decreasing order of number of animal species as far as India is concerned?
 (a) Mammals, Aves, Reptiles, Amphibians
 (b) Aves, Reptiles, Mammals, Amphibians
 (c) Mammals, Reptiles, Amphibians, Aves
 (d) Reptiles, Amphibians, Mammals, Aves
19. Organization responsible for maintaining Red Data Book is
 (a) IUCN (b) WWF
 (c) CITES (d) IBWL

**RESPONSE
GRID**

9. (a)(b)(c)(d) 10. (a)(b)(c)(d) 11. (a)(b)(c)(d) 12. (a)(b)(c)(d) 13. (a)(b)(c)(d)
 14. (a)(b)(c)(d) 15. (a)(b)(c)(d) 16. (a)(b)(c)(d) 17. (a)(b)(c)(d) 18. (a)(b)(c)(d)
 19. (a)(b)(c)(d)

Space for Rough Work

20. Which option correctly describes are equations for curves A and B, in the given graph of species - area relationship?



- | | |
|--|--|
| A | B |
| (a) $S = CA^z$ | $\text{Log } S = \text{Log } C + Z \text{ Log } A$ |
| (b) $\text{Log } S = \text{Log } C + Z \text{ Log } A$ | $S = CA^z$ |
| (c) $\text{Log } C = \text{Log } S + Z \text{ Log } A$ | $S = CA^z$ |
| (d) $S = CA^z$ | $\text{Log } C = \text{Log } S + Z \text{ Log } A$ |

21. Genetic variations affect the production of the drug reserpine in the medicinal plant *Rauwolfia vomitoria* growing in different Himalayan ranges. What kind of diversity does it indicate?
- (a) Species diversity
(b) Genetic diversity
(c) Ecological diversity
(d) None of these
22. Keystone species deserve protection because these
- (a) are capable of surviving in harsh environmental conditions
(b) indicate the presence of certain minerals in the soil
(c) have become rare due to overexploitation
(d) play an important role in supporting other species.
23. In a National Park, protection is provided to
- (a) flora and fauna (b) entire ecosystem
(c) fauna only (d) flora only
24. Which of these organisms are protected by people of 'Bishnoi' community of Rajasthan?
- (a) *Prosopis cineraria* (b) Black buck

- (c) Bhojpatra (d) Both (a) and (b).
25. Which of the following statements regarding biodiversity hot spots are incorrect?
- (i) High endemism
(ii) High levels of species richness.
(iii) Total number is 34 in the world.
(iv) Five of these occur in India.
(v) High alien species invasions.
(vi) Cover less than 2% of the earth's land area; but if properly conserved, they can reduce extinctions by about 30%.
- (a) (i), (ii), (iii) (b) (i), (ii), (iii), (iv)
(c) (iv), (v), (vi) (d) (i), (ii), (iv)
26. Ex situ conservation is used for the conservation of
- (a) all plants
(b) all animals
(c) threatened animals and plants
(d) both (a) and (b).
27. _____ National Park was the first National Park of India.
- (a) Jim Corbett (b) Nanda Devi
(c) Kaziranga (d) Jaldapara
28. First 'Earth Summit' for 'Convention on Biological Diversity' (CBD) was held at
- (a) Johannesburg (2002), S. Africa
(b) Rio de Janeiro (1992) Brazil
(c) Dehradun (1992), India
(d) New York (2000), U.S.A.
29. *Antilopa carvicapra*/Black Buck is –
- (a) Vulnerable (b) Endangered
(c) Critically endangered (d) Extinct in the wild
30. Alpha diversity is present –
- (a) Within community (b) Between community
(c) Ranges of communities (d) All of the above
31. Biodiversity is determined by –
- (a) Number of individuals in an area
(b) Species richness
(c) Evenness
(d) Both (b) and (c)

**RESPONSE
GRID**

20. (a) (b) (c) (d)
25. (a) (b) (c) (d)
30. (a) (b) (c) (d)

21. (a) (b) (c) (d)
26. (a) (b) (c) (d)
31. (a) (b) (c) (d)

22. (a) (b) (c) (d)
27. (a) (b) (c) (d)

23. (a) (b) (c) (d)
28. (a) (b) (c) (d)

24. (a) (b) (c) (d)
29. (a) (b) (c) (d)

Space for Rough Work

32. Which of the following species is endangered ?
 (a) *Panthera leo perrica* (b) *Pythan molurus*
 (c) *Chelonia mydas* (d) *Pallas siberian crane*
33. Decrease in species diversity in tropical countries is mainly due to –
 (a) Urbanisation (b) Pollution
 (c) Deforestation (d) Soil erosion
34. Which of the following animal has become almost extinct in India ?
 (a) Wolf (b) Rhinoceros
 (c) Hippopotamus (d) Cheetah
35. Those species whose populations have been seriously depleted and whose ultimate security is not assured are known as –
 (a) Threatened species (b) Endangered species
 (c) Vulnerable species (d) Rare species
36. Which of the following is threatened by illegal trade in wildlife products?
 (a) Nile perch (b) Elephants
 (c) Key deer (d) Galapagos tortoises
37. Humans have altered _____ of Earth's land surface.
 (a) very little (b) about 25%
 (c) about 50% (d) about 80%
38. Which endangered animal is the source of world's finest, lightest, warmest and most expensive wool-the shahtoosh ?
 (a) Nilgai (b) Cheetal
 (c) Kashmiri Goat (d) Chiru
39. Which of the following is the most serious threat to biodiversity?
 (a) Competition from exotic species
 (b) Commercial harvesting
 (c) Habitat destruction
 (d) Overexploitation
40. Diversity in the type of breaks of finches adapted to different feeding habits on the Galapagos Islands, as observed by Darwin, provides evidence for
 (a) intraspecific variations.
 (b) intraspecific competition.
 (c) interspecific competition.
 (d) origin of species by natural selection.
41. Which of the following is not a step in understanding biodiversity ?
 (a) Naming the species
 (b) Looking at other related species
 (c) Assessing the species geographic range
 (d) Quantifying the species genome
42. Diversity of habitat over the total landscape is called
 (a) β diversity (b) γ diversity (gamma)
 (c) landscape diversity (d) ecosystem diversity
43. The term hot spot for high diversity ecological regions was coined by –
 (a) IUCN (b) Myers
 (c) Odum (d) Kormandy
44. Following arrangement is correct from the point of view of decreasing biodiversity in angiosperms (N), fungi (F), pteridophytes (P) and algae(A)
 (a) $N > F > P > A$ (b) $N > F > A > P$
 (c) $F > N > P > A$ (d) $F > N > A > P$
45. The number of plant species recorded from India, is
 (a) 30,000 (b) 45,000
 (c) 70,000 (d) 90,000

**RESPONSE
GRID**

32. (a)(b)(c)(d) 33. (a)(b)(c)(d) 34. (a)(b)(c)(d) 35. (a)(b)(c)(d) 36. (a)(b)(c)(d)
 37. (a)(b)(c)(d) 38. (a)(b)(c)(d) 39. (a)(b)(c)(d) 40. (a)(b)(c)(d) 41. (a)(b)(c)(d)
 42. (a)(b)(c)(d) 43. (a)(b)(c)(d) 44. (a)(b)(c)(d) 45. (a)(b)(c)(d)

Space for Rough Work

DAILY PRACTICE PROBLEM DPP CHAPTERWISE 37 - BIOLOGY			
Total Questions	45	Total Marks	180
Attempted		Correct	
Incorrect		Net Score	
Cut-off Score	50	Qualifying Score	60
Success Gap = Net Score – Qualifying Score			
Net Score = (Correct \times 4) – (Incorrect \times 1)			

HINTS & SOLUTIONS

DPP/CB37

1. (a) In situ means keeping endangered species of animals or plants into natural environment and not in the environment that looks like natural but is man made, like zoological & botanical gardens. *In situ* includes, national parks, sanctuaries and biosphere reserve.
2. (d) Biodiversity Act of India was passed by the parliament in the year 2002.
3. (b) Biodiversity is the number of variety of organism found within a specified geographic region.
4. (d) The 'Cheetah' has become extinct from India. The endangered subspecies *Acinonyx jubatus venaticus* lives in Asia (Iran). In 1990, there were reports in the Times of India of a cheetah sighting in eastern India. There is a chance some cheetahs remain in India, though it is doubtful. There have also been reports of Asiatic cheetahs in the Balochistan Province of Pakistan, though these continue to be unverified. The cheetah prefers to live in an open biotope, such as semi-desert, prairie, and thick bushes.
5. (d) Hot spots are those areas which were rich in biodiversity but now are under threat due to direct or indirect interference of human activities. These regions are on the edge to get some of their species extinct due to humans. Western Ghats in India are under threat due to continuous developmental activities and Doon valley is under threat due to continuous mining activities.
6. (b)
7. (d) *Podophyllum* is one of the endangered species of Indian medicinal plants. It is used to remove benign (not cancer) growths, such as certain kinds of warts. It works by destroying the tissue
8. (a) Kaziranga National Park in Assam is famous as a protection environmental park for rhinoceros.
9. (c) 10. (b)
11. (c) Lesser inter-specific competition is not observed in biodiversity hotspots.
12. (b) In India maximum genetic diversity is seen in rice. Total of 23 variety of irrigated ecology and 8 varieties of rainfed ecology has been invented in India.
13. (d) The statements (i) and (ii) are correct. The statement (iii) is incorrect because predators cannot lead to the extinction of prey species. Predator and prey evolve together. The statement (iv) is incorrect because chemical such as nicotine and strychnine produced by the plants are not metabolic disorders but are metabolic wastes.
14. (b) Diversity is due to the long term evolutionary changes. Adaptability to continuous changes in environmental conditions is important for natural selection of variants and variations generation after generation leading to emergence of diverse descendants.
15. (d) Higher diversity in tropical areas is because (i) Speciation is a function of time. Temperate areas have undergone frequent glaciation in the past. It killed most of the species. No such disturbances occurred in tropics where species continued to flourish and evolve undisturbed for millions of years (ii) There are no unfavourable seasons in tropics. Continued favourable environment has helped tropical organisms to gain more niche specialisation and increased diversity. (iii) More solar energy is available in tropics. This promotes higher productivity and increased biodiversity. (iv) Resource availability is higher in tropics (v) There is reduced competition in tropics due to favourable environment. (vi) Rate of extinction is low in tropics.
16. (b) *Lantana*, *Eichhornia* and African catfish are exotic species. Non-native or exotic species are often introduced inadvertently for their economic and other uses. They often become invasive and drive away the local species. These species are considered to be second major cause of extinction of species. Exotic species have proved harmful to both aquatic and terrestrial ecosystems.
17. (d) A stable community is self-perpetuating and final biotic community that is in perfect harmony with the physical environment. It does not show much of changes and is usually resilient to natural or man made disturbances, it is also resistant to invasion by alien species.
18. (b) The number of species of aves, reptiles, amphibians and mammals are 1232, 456, 209 and 300 respectively.
19. (a) IUCN is International Union of Conservation of Nature and Natural Resources, which is now called World Conservation Union (WCU). It has its headquarters at Morges, Switzerland. It maintains a red data book or red list which is a catalogue of taxa facing risk of extinction.
20. (a) The relationship between species richness and area is rectangular hyperbola for a wide variety of taxa whether they are birds, bats, fresh water fishes or flowering plants and the equation can be given as $S = CA^Z$. On a logarithmic scale, it is straight line described by the equation $\log S = \log C + z \log A$. Where S is species richness, Z is slope of line or regression coefficient, C is Y-intercept while A is area.
21. (b) Genetic diversity is the diversity in the numbers and types of genes as well as chromosomes present in different species and the variations in the genes and their alleles in the same species. Genetic variation in *Rauwolfia vomitoria* indicates genetic diversity. Another example is the presence of more than 50,000 genetically different strains of rice, and 1000 varieties of mango in India.
22. (d) Keystone species are those species which have significant and disproportionately large influence on the community structure and characteristics. It often has considerably low abundance and biomass as compared to dominant species. Removal of such species causes serious disruption in structure and function of community.
23. (b) National park is a reserved area used for conservation purposes. It is maintained by the government. Cultivation, grazing, forestry and habitat manipulation are not allowed. Protection is provided to the entire ecosystem.
24. (d) Bishnois of Rajasthan protect *Prosopis cineraria* and Black buck religiously.
25. (b) Exotic species tend to cause a threat to biodiversity. They are not found in hot spots which are regions of high biodiversity. In India, 3 hotspots are found, i.e., Western Ghats and Sri Lanka, Indo-Burma (NE India) and Himalays.
26. (c) Ex situ (off site) conservation is conservation of selected rare plants/animals in places outside their natural homes. Ex situ conservation includes offsite collections, gene banks in vitro fertilization, cryopreservation techniques and tissue culture.
27. (a) Jim Corbett National Park (district Nainital Uttarakhand) is the first national park of India, established in 1936.
28. (b) Earth Summit at Rio de Janeiro (1992), Brazil, promoted Convention on Biological Diversity (CBD) which was signed by 152 nations. Its recommendations came into effect on 29th Dec, 1993. India became a party to this Convention on Biological Diversity in May, 1994.
29. (a)
30. (a) Alpha diversity is present within community.
31. (d) 32. (b) 33. (c) 34. (d)
35. (b) Those species whose populations have been seriously depleted and whose ultimate security is not assured are known as Endangered species.
36. (b) 37. (c)
38. (d) Chiru is Himalayan Ibex, also called Tibetan Antelope. Shahtoosh is obtained from its neck hair. It is banned under the law.
39. (c)
40. (d) Nature selects those set of characters that are best adapted to the environment. This has resulted in the great diversity seen in the population of finches.
41. (d) 42. (b) 43. (b) 44. (d) 45. (b)