



BIOLOGY

BOOKS - PRADEEP BIOLOGY (HINGLISH)

BIODIVERSITY AND CONSERVATION

Curiosity Questions

1. Why does biodiversity differ from place to place ?

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2. How are disease resistant and high-yielding varieties of crops, fruits etc. developed ?

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3. Why should the species not in any way useful by protected ?

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4. Is nature also causing extinction of organisms ?

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Ncert Exercises With Answers

1. Name the three important components of biodiversity.

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2. How do ecologists estimate the total number of species present in the world?

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3. Give three hypotheses for explaining why tropics show greatest levels of species richness.

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4. What is the significance of the slope of regression in a species – area relationship?

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5. What are the major causes of species losses in a geographical region ?

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6. How is biodiversity important for ecosystem functioning?

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7. What are sacred groves and their role in biodiversity conservation ?

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8. Among the ecosystem services are control of floods and soil erosion. How is this achieved by the biotic components of the ecosystem?

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9. The species diversity of plants (22 %) is much less than that of animals (72 %). What could be the explanations to how animals achieved greater diversification ?

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10. Can you think of a situation where we deliberately want to make a species extinct? How would you justify it?



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Additional Questions Very Short Answer Questions

1. Tick the correct answer :

(i) Approximate percentage of endomic flowering plnts in India is : (a) 23 ,

(b) 33 , (c) 53 , (d) 63

(ii) The Earth Summit held at Rio de Janerio in 1992 resulted into :

(a) Compilation of Red List : (b) Establishment of Biosphere Reserves :

(c) Convention of Biodiversity : (d) IUCN



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2. Microorganisms are a part of wild life. Do you agree ?



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3. Which pest attacked the high-yielding varieties of rice a few years ago ?

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4. What is the source of penicillin ?

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5. Which one of the following birds has recently become extinct ?

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6. Cite two examples of Indian endangered species.

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7. What do the abbreviations ZSI and IBWL stand for ?



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8. Give two soap substitutes provided by forests.



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9. How much area is covered by forests in India ?



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10. Name 3 products of forest insects.



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11. How much land should be under forests in country ?



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12. Which animals are captured in large numbers for pet trade ?

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13. What is the major reason for the decrease and extinction of wild life of our country ?

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14. Which species should be paid special attention in conservation?

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15. Indian Rhinoceros (one -horned rhinoceros) is protected in :

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16. How many projects are engaged in tiger protection ?

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17. What is biodiversity?

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18. What do you mean by alpha diversity ?

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19. Define beta diversity.

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20. Name the plant from which quinine is obtained.



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21. What is extinction ?



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22. What is the recent name of IUCN ?



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23. Name Red List categories that cover threatened species.



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24. What is cryopreservation ?

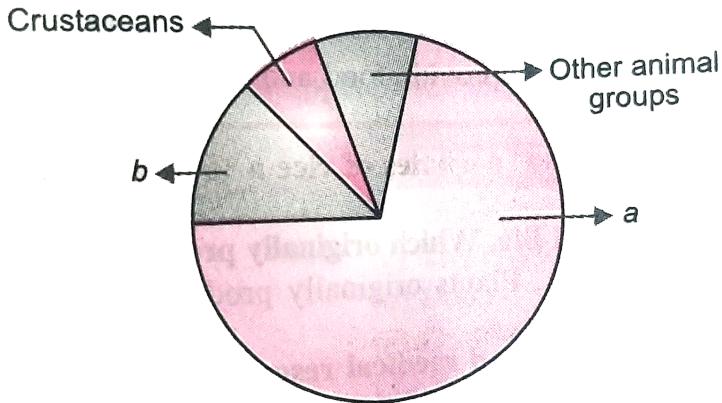


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25. List any two economically important products for humans obtained from *Apia Indica*.

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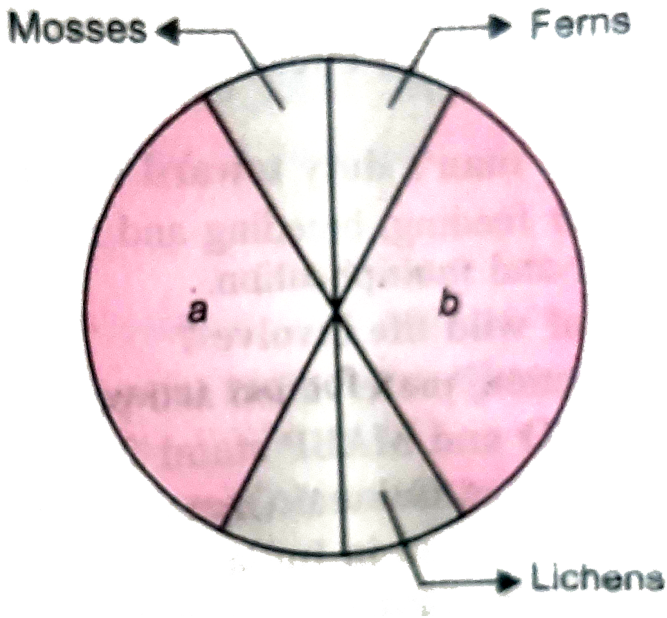
26. Study the given diagram and answer the following :



Name the labelled area 'a' and 'b' of the pie diagram representing the global biodiversity of invertebrates showing their proportionate number of species of major taxa.

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27. Name the unlabelled areas 'a' and 'b' of the pie chart representing the biodiversity of plants showing their proportionate number of species of major taxa.



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28. India has more than 50,000 strains of rice. Mention the level of biodiversity it represents.

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29. What is the difference between endemic and exotic species ?



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30. Name the type of biodiversity represented by the following:

- (i) 50,000 different strains of rice in India
- (ii) Estuaries and alpine meadows in India.



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31. Name the type of biodiversity represented by the following:

- i) 1000 varieties of mangoes in India.
- ii) Variations in terms of potency and concentration of represents in *Rauwolfia vomitoria* growing in different regions of Himalayas.



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32. Identify 'a' and 'b' in the figure given below representing proportionate number of major vertebrate taxa.

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33. Ramsar convention deals with which type of habitats. How many such habitats are included in Ramsar list in India. ?

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34. When was Ramsar convention signed ? When it finally came into force ?

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35. Give any two ecosystem services that the wetlands provide to us.

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Additional Questions Short Answer Questions

1. Name the 3 major categories of wild life. Which originally produces the biomass and how much in a year ?



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2. List the animals used for biological and medical research .



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3. What is meant by extinction of a species ?



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4. How cleanliness can lead to extinction of species ?



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5. What are threatened species ? Name their 3 types in order of the danger of extinction they face.

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6. What are critical habitats ? What is man's duty toward them ?

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7. What steps does the management of wild life involve ?

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8. What for the abbreviations UNESCO and MABP stand ?

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9. Name the 3 dominal types of forests found in India.

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10. What is improvement operation in forest management ?

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11. What factors increased the hunting of animals ?

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12. Why has Jammu and Kashmir state not adopted the Wild Life (Protection) Act, 1972 ?

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13. How do the forests help in maintaining the climate ?



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14. What is a musk ? Give its source.



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15. Fill in the blanks :

- (a) Biodiversity refers to the totality of,, and of a region.
- (b) Within- community diversity is called
- (c) are the traditional protected areas.
- (d) Exotic species have a large impact, especially in ecosystems.
- (e) Between- community diversity is called
- (f) and in India are among the 25 global biodiversity hot spots.



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16. Add appropriate words in the blanks of the following sentences -

- (i) Cheetah (*Acinomyx*) is an animal.
- (ii) Cleanliness observed by man adversely affects the habitats of
- (iii) A biosphere reserve has 3 zones....., buffer, and
- (iv) Natural camphor is obtained from tree.
- (v) Wild life includes animals, plants and



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17. Match the items given in column I with appropriate items (one or more) of column II.

Column I

Column II

- | | |
|-------------------------|---|
| (i) Rich biodiversity | (a) Within community diversity |
| (ii) Alpha diversity | (b) Diversity of whole geographical region. |
| (iii) Gamma diversity | (c) Tropical areas |
| (iv) Endangered species | (d) Dodo |
| (v) Extinct species | (e) Great Indian bustard |
| | (f) Coral reefs |



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18. In a biosphere, immense biological diversity exists at all levels of biological organization. Explain any two levels of biodiversity.

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19. Biodiversity must be conserved as it plays an important role in many ecosystem services that nature provides. Explain any two services of the ecosystem.

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20. Why is genetic variation important in the plant *Rauwolfia vomitoria* ?

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21. What is Red Data Book ?

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22. Differentiate between the in situ and ex situ approaches of conservation of biodiversity.

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23. What are endangered species ? How many animals and plants are endangered in India ?

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24. What is in-situ conservation ?

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25. Where would you expect more species biodiversity- in tropics or in polar regions? Give reasons in support of your answer.



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26. Alien species are a threat to native species. Justify taking example of an animal and a plant alien species.

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27. List any two Indian wetlands from North India listed in Ramsar list.

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28. List any four techniques where the principle of ex-situ conservation of biodiversity has been employed.

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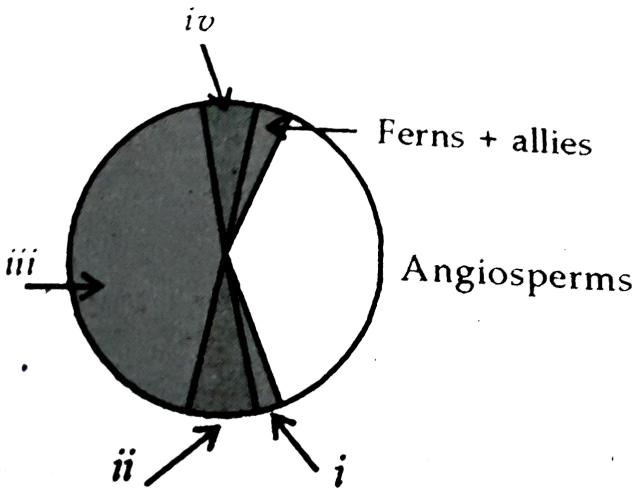
29. Why are sacred groves highly protected ?

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30. Suggest two practices giving one example of each, that help protect rare or threatened species.

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31. Identify the areas labelled (i), (ii), (iii) and (iv) in the pie chart given below representing the biodiversity of plants showing their proportionate number of species of major taxa.



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32. What is biodiversity ? Why has it become important recently ?

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33. Explain what is meant by species diversity.

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34. Distinguish between endangered, vulnerable and rare species.

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35. What are the specific objective of conservation of wild life ?

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36. Write a note on management of wild life.



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37. How do national parks and sanctuaris differ ? Give the number of each in India.



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38. Why should it be unethical to destroy wild species ?



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39. Give atleast two examples to explain how introduction of exotic species has advesely affected the native species.



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40. (a) Name the category of protected areas recently evolved by UNESCO's Man and Biosphere Programme (MABP). Define it.

(b) Give its zones. Also explain its role.



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41. (a) Which conservation method is used to maintain species of wildlife in their natural habitats ?

(b) Give atleast two differences between a national park and wildlife sanctuary.



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42. Where are the following located ? (a) Yak Research Centre (b) Project Hangul (c) Periyar Sanctuary (d) Kaziranga National Park (e) Gir National Park.



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43. How is the presently occurring species extinction different from the earlier mass extinctions ?

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44. How do scientists extrapolate the total number of species on earth ?

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45. HOW DO WE CONSERVE BIODIVERSITY?

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46. There are many animals that have become extinct in the wild but continue to be maintained in Zoological park.

i) What type of biodiversity conservation is observed in this case?

ii) Explain any other two ways which help in this type of conservation.



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47. List any three obligations of the member countries of the Ramsar convention.



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48. Name three categories in which various wetland types are grouped as per Ramsar convention.



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49. Many plant and animal species are on the verge of their extinction because of loss of forest land by indiscriminate use by humans. As a biology student, what method would you suggest alongwith its advantages that can protect such threatened species from getting extinct.



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50. in-situ' conservation can help endangered/threatened species. Justify the statement.



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51. Name and describe any three causes of biodiversity losses.



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52. (a) " India has greater ecosystem diversity than Norway". Do you agree with the statement ? Give reasons in support of your answer.

(b) Write the difference between genic biodiversity and species biodiversity that exists at all the levels of biological organisation.



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53. Explain the 'Ex-situ conservation' of Biodiversity. How is the in-situ conservation different from it ?

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Additional Questions Long Answer Type

1. What kind of threats to the biodiversity may lead to its loss ?

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2. How is diversity at all levels generally conserved ?

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3. Broadly classify the extinction process.

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4. Write short notes on the following :

- (a) Ex-situ conservation
- (b) Hot spots of biodiversity
- (c) Biosphere reserves
- (d) IUCN Red list
- (e) Protected areas.



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5. What are the three major threat categories of species ? Describe with examples.



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6. Write an explanatory note on the efforts for conservation of biodiversity in India.



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7. How is biodiversity distributed along major environmental gradients ?



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8. Discuss the factors which necessitate the conservation of wild life.



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9. Give three main causes of extinction of a species by human intervention.



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10. What is an endangered species ? Give an example of an endangered plant and animal species each ?



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11. CONSERVATION OF WILD LIFE



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12. Describe the consumptive use value of biodiversity as food, drugs and medicines, fuel and fibre with suitable examples.



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13. Species diversity decreases as we move away from the equator towards the poles. What could be the possible reasons ?



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14. Give five differences between a national park and a sanctuary.



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15. List four causes of biodiversity loss.



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16. What is Ramsar Convention ? Give its importance.



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Analytical Questions With Answer

1. According to David Tilman, greater the diversity, greater is the primary productive. Can you think of a very low diversity man-made ecosystem that has high productivity ?



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2. Why should killing wild animals be regarded unethical ?

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3. Giving two reasons explain why there is more species biodiversity in tropical latitudes than in temperate ones.

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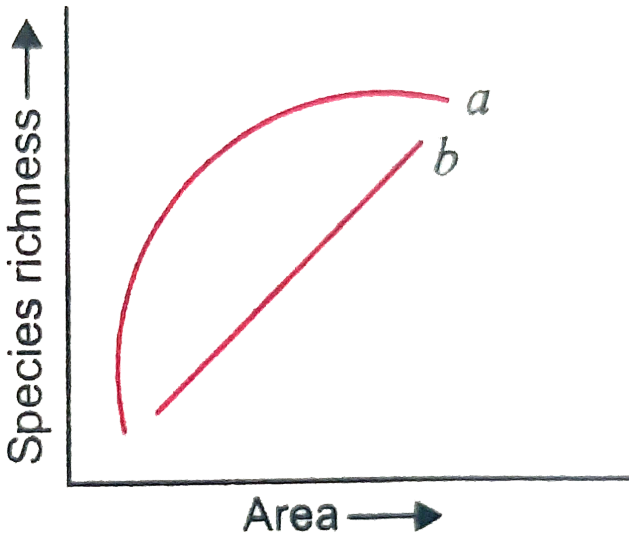
4. "Stability of a community depends on its species richness." Write how did David Tilman show this experimentally.

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5. What do you mean by Ramsar Convention ? What was its need ?

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6. The given graph shows species-area relationship. Write the equation of the curve 'a' and explain.



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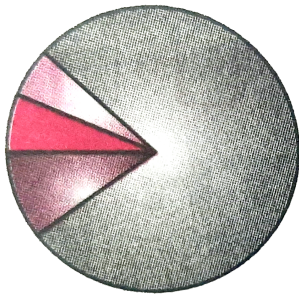
7. Discuss one example, based on your day-to-day observations, showing how loss of one species may lead to the extinction of another.

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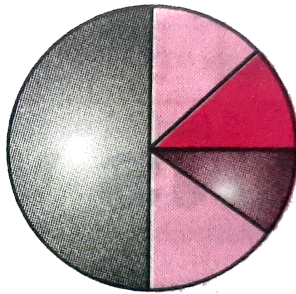
8. Why are the conventional methods not suitable for the assessment of biodiversity of bacteria ?

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9. In the pie charts (A) and (B) drawn below to show the global animal diversity, which groups of animals would you name and write on the area shaded black in (A) and (B). In which kind of habitat would you find those groups of animals ?



A
Invetebrates



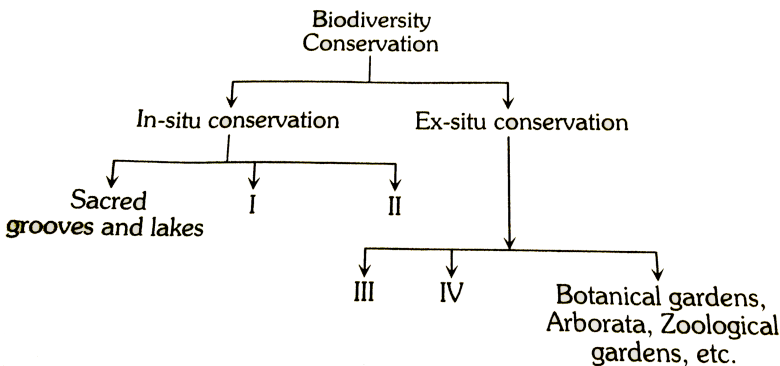
B
Vertebrates

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10. How is the 'sixth episode of extinction' of species of earth, now currently in progress, different from the five earlier episodes ? What is it due to ? Explain the various causes that have brought about this difference.

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11. The following is a incomplete flow chart depicting in - situ and ex-situ approaches of conserving biodiversity. Critically study and fill in the blanks I, II, III and IV



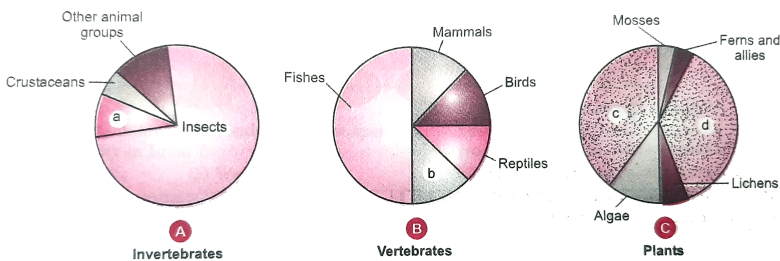
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12. (a) Mention those red list categories which together are referred to as 'threatened species'.

(b) What are rare species ? Are these endangered or vulnerable at present ? Give any two example of rare species in India.

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13. Given below are pie diagrams A, B and C related to proportionate number of species of major taxa of invertebrates, vartebrates and plants respectively. Critically study and fill in the blanks (a), (b), (c) and (d).



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14. What are sacred groves and their role in biodiversity conservation ?



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15. (a) What are hot spots of biodiversity ?

(b) List four main criteria for determining a particular place as hot spot.

(c) Among the hot spots of the world, list two which are located in India.



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16. From among plants, invertebrates and vertebrates, list respectively those taxa which occur maximum in numbers at present.



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17. Who was instrumental in developing 'hot spots' ? List four criteria for determining a hot spot.



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18. (a) Expand the abbreviations IUCN, CBD and CITES.

(b) In which year and where 'Earth Summit' was held ?



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19. When did India sign CBD ? List three goals of CBD.



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20. Why is India called a megadiversity center ?



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Practice Question Multiple Choice Questions

1. Which of the following is considered a hotspot of biodiversity in India?

A. Aravali hills

B. Western Ghats

C. Indo-gangetic Plain

D. Eastern Ghats

Answer: b



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2. Which of the following pairs of an animal and a plant represent endangered organism in India

A. Banyan and black duck

B. Bentinckianscobarica and red panda

C. Tamarind and rhesus monkey

D. Cinchona and leopard

Answer: B



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3. Which one of the following is not included under insitu conservation

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

Answer: c



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4. Which one of the following is the correctly matched pair of an endangered animal and a National Park ?

- A. Great Indian bustard : Keoladeo National Park
- B. Lion : Corbett National Park
- C. Rhinoceros : Kaziranga National Park

D. Wild ass : Dudhwa National Park

Answer: c



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5. Which is the main cause for the extinction of some species in tropical forest ?

A. deforestation

B. afforestation

C. pollution

D. soil erosion

Answer: a



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6. In India, we find mangoes with different flavours, colours, fibre content , sugar content and even shelf-life. The large variation is on account of

- A. species diversity
- B. induced mutations
- C. genetic diversity
- D. hybridization

Answer: c



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7. Biosphere reserves differ from national parks and wildlife sanctuaries because in the former

- A. human beings are not allowed to enter
- B. people are an integral part of system
- C. plants are paid greater attention than the animals

D. living organisms are brought from all over the world and preserved for posterity

Answer: b

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8. Read statement a and b. Identify correct choice

Statement a. Diversity observed in an entire geographical area, is called gamma diversity.

Statement b. Biodiversity decreases from high altitudes to low altitudes.

- A. statement A is correct, B is wrong
- B. statement B is correct, A is wrong
- C. both the statement A and B are correct
- D. both the statement A and B are wrong.

Answer: a

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9. The world biodiversity day is celebrated annually on :

- A. 5th June
- B. 29th December
- C. 22nd April
- D. 16th September

Answer: b



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10. Which of the following regions of our country are known for their rich biodiversity

Or

Which of the following are considered hot-spot of biodiversity in India

Or

In India, rain forests are found in

- A. Western ghats and Eastern himalayas
- B. Western ghats and Deccan plateau
- C. Eastern himalayas and Gangetic plain
- D. Trans himalayas and Deccan peninsula

Answer: a



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11. 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.

Answer: d



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12. 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

Answer: a



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13. Quinine is obtained from

- A. bark of Cinchoma
- B. root of Cinchoma
- C. wood of Cinchona
- D. leaves of Cinchona

Answer: a



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14. Manas sanctuary is located at

- A. Rajasthan
- B. Assam
- C. Bihar
- D. Gujarat

Answer: b



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15. Extinction of a species in a food chain is compensated by:

- A. food chain
- B. ecological pyramid
- C. food web
- D. none of these

Answer: c



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

- A. lesser inter-specific competition

B. species richness

C. endemism

D. accelerated species loss

Answer: a



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17. World Summit on Sustainable Development (2002) was held in:

A. Argentina

B. South Africa

C. Brazil

D. Sweden

Answer: b



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18. The table below gives the populations (in thousands) of ten species (A-J) in four areas (a-d) consisting of the number of habitats given within brackets against each. Study given within brackets against each. Study the table and answer the question which follows



Which area out of a to d shows maximum species diversity ?

A. s

B. p

C. q

D. r

Answer: a



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19. Habitual loss and fragmentation over exploitation, alien species invasion and co-extinction are causes for:

A. population explosion

B. migration

C. biodiversity loss

D. pollution

Answer: c



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20. The venue and year of the Earth Summit on Conservation of Biodiversity was :

A. South Africa, 2002

B. Rio de Janeiro, 1992

C. Johannesburg, 2004

D. Stockholm, 1974

Answer: b

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21. India become a party to 'Convention on Biological Diversity' in the year

A. 1994

B. 1993

C. 1992

D. 1998

Answer: a

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22. Which National park is the new hone of the Indian one- horned rhinoceros ?

A. Dudhwa

B. Corbett

C. Kanha

D. Bandhavgarh

Answer: a



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23. National Wildlife (Protection) Act was formulated during

A. 1972

B. 1981

C. 1986

D. 1991

Answer: a



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24. A taxon which is facing an extremely high risk of extinction in the wild in immediate future is known as

- A. rare
- B. exotic
- C. vulnerable
- D. critically endangered

Answer: d



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25. All the following are included under in situ conservation except

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

Answer: c



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26. Most of the endangered species are victims of

- A. over-hunting
- B. acid rain
- C. competition with introduced species
- D. habitat destruction

Answer: d



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27. The first national park established for conserving wildlife, an integral part of nature in India is :

A. Kanha

B. Jim Corbett

C. Kaziranga

D. Gir

Answer: b



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28. List of endangered species was released by :

A. IUCN

B. BBC

C. WCC

D. UN

Answer: a



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

- A. Jim corbett
- B. Ranthambhor
- C. Sunderbans
- D. Gir

Answer: d



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30. What is common to Lantana, Eichornia and African catfish ?

- A. All are endangered species of India
- B. All are key stone species
- C. All are mammals found in India.

D. All the species are neither threatened nor indigenous species of India.

Answer: d



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31. The extinction of passenger pigeon was due to

- A. Increased number of predatory birds.
- B. Over exploitation by humans
- C. Non- availability of the food.
- D. Bird flu virus infection.

Answer: b



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32. Which of the following statements is correct ?

- A. Parthenium is an endemic species of our country.
- B. African catfish is not a threat to indigenous cat fishes.
- C. Steller's sea cow is an extinct animal
- D. Lantana is not known as carrot grass.

Answer: c



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33. Among the ecosystem mentioned below, where can one find maximum biodiversity?

- A. Mangroves
- B. Desert
- C. Coral reefs
- D. Alpine meadows

Answer: c



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34. Which of the following forests is known as the 'lungs of the planet earth'?

- A. Tiaga forest
- B. Tundra forest
- C. Amazon rain forest
- D. Rain forests of North East India.

Answer: c



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35. The active chemical drug reserpine is obtained from

A. Datura

B. Rauwolfia

C. Atropa

D. Papaver

Answer: b



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36. Which of the following group exhibit more species diversity

A. Angiosperms

B. Algae

C. Bryophytes

D. Fungi

Answer: d



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37. Which of the below mentioned regions exhibit less seasonal variations ?

- A. Tropics
- B. Temperates
- C. Alpines
- D. Both (a) & (b)

Answer: a



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38. The historic convention on Biological Diversity held in Rio de Janeiro in 1992 is known as

- A. CITES Convention
- B. The Earth Summit

C. G-16 Summit

D. MAB Programme

Answer: b



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39. What is common to the techniques (i) in vitro fertilisation, (ii) Cryopreservation and (iii) tissue culture?

- A. All are in situ conservation methods.
- B. All are ex situ conservation methods.
- C. All require ultra modern equipment and large space.
- D. All are methods of conservation of extinct organisms.

Answer: b



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

- A. National park
- B. Wildlife sanctuary
- C. Seed bank
- D. Sacred grooves.

Answer: c

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41. The Indian rhinoceros is a natural inhabitant of which one of the Indian states ?

- A. Arunachal Pradesh
- B. Assam
- C. Himachal Pradesh
- D. Uttar Pradesh

Answer: b



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42. In India the rhinoceros is the most important protected species in

Or

The single horned rhinoceros is protected at

- A. Anashi National Park
- B. Rajiv Gandhi National Park
- C. Kanha National Park
- D. Kaziranga National Park

Answer: d



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43. The term alpha diversity refers to

- A. genetic diversity
- B. community and ecosystem diversity
- C. species diversity
- D. diversity among plants

Answer: b

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44. India's share in the global species diversity is about

- A. 0.02
- B. 0.04
- C. 0.06
- D. 0.08

Answer: d

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45. Recently attempts are being made to reintroduce tigers in this famous National Park

A. Corbett

B. Bandavgarh

C. Sariska

D. Kanha

Answer: c



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46. IUCN stands for :

A. Indian Union for Conservation of Nature

B. International Union for Conservation of Nature and Natural Resources.

C. Indian Union for Conservation Nomenclature

D. International Union for Conservation of Nutrients

Answer: b



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47. The Wildlife (protection) Act 1972 was first amended in

A. 1991

B. 1995

C. 2001

D. 2007

Answer: a



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48. Hotspots of biodiversity means

- A. area of the earth that contains many endemic species
- B. species severes as proxy for entire communities in particular area
- C. species in particular niche/area
- D. species diversity at particular area

Answer: a



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49. Which one of the following expanded forms of the following acronyms is correct ?

- A. IPCC - Internation Panel for climate change
- B. UNEP - United Nations Environment Policy
- C. EPA-Environment Pollution Agency

D. IUCN - International Union for Conservation of Nature and Natural Resources.

Answer: d



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50. Which one of the following shows maximum genetic diversity in India

Or

Which one has the largest species variety India

A. groundnut

B. rice

C. maize

D. mango

Answer: b



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51. 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 in the dominant species of the region
- D. species endemic to the region

Answer: b



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52. Which of the following is considered a hotspot of biodiversity in India?

- A. Eastern Ghats
- B. Gangetic Plain
- C. Sunderbans

D. Western Ghats

Answer: d



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

A. Fungi

B. Mosses

C. Algae

D. Lichens

Answer: a



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54. Sacred groves are specially useful in

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

Answer: d

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55. 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 high degree of species richness and endemism

D. Conservation of biodiversity is just a fad pursued by the developed countries

Answer: c

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56. How many hot spots of biodiversity in the world have been identified till date by Norman Myers

A. 25

B. 24

C. 40

D. 34

Answer: d

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57. Kanha National Park is located in and is famous for

A. Madhya Pradesh, elephant

B. Madhya Pradesh, tiger

C. Odisha, tiger

D. Assam, elephant

Answer: b



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58. India has only 2-4 % of the world's land area but its share of the global species diversity is

A. 1%

B. 3%

C. 5%

D. 8%

Answer: D



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

- A. Seed banks
- B. Shifting cultivation
- C. Botanical gardens
- D. Field gene banks

Answer: b



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60. Which one of the following is not a correct statement?

- A. Botanical gardens have collection of living plants for reference.

- B. A museum has collection of photographs of plants and animals
- C. Key is a taxonomic aid for identification of specimens.
- D. Herbarium houses dried, pressed and preserved plant specimens.

Answer: b



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61. An example of ex situ conservation is

Or

Which is the best method of germplasm conservation

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

Answer: b



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

- A. Vulnerable
- B. Endemic
- C. Critically Endangered
- D. Extinct

Answer: c



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

- A. ICFFE
- B. IUCN

C. UNEP

D. WWF

Answer: b



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64. Given below is the representation of the extent of global diversity of invertebrates. What groups the four portions (A-D) represent respectively



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65. 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. Western Ghat

B. Meghalaya

C. Corbett National Park

D. Keolado National Park

Answer: d



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66. The species diversity decreases from lower to higher altitudes on a mountain. This is due to

A. increase in temperature

B. decrease in temperature

C. greater in temperature

D. Both (b) and (c)

Answer: B



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67. The species confined to a particular region and not found elsewhere is termed as

- A. Rare
- B. Keystone
- C. Alien
- D. Endemic

Answer: d



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68. Select the correct statement about biodiversity

- A. The desert area of Rajasthan and Gujarat have a very high level of desert animals.

B. Large scale planning 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.

Answer: c



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

A. Alien species invasion

B. Habitat loss and fragmentation

C. Co-extinction

D. Over-exploitation

Answer: b



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70. How many hot spots of biodiversity in the world have been identified till date by Norman Myers ?

A. 17

B. 25

C. 34

D. 43

Answer: c



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71. Which of the following is correctly matched?

A. Aerenchyma - Opuntia

B. Age pyramid - Biome

C. Parthenium hysterophorus- Threat to biodiversity

D. Stratification - Population

Answer: c



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72. 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

Answer: c



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73. Which of the following National Parks is home to the famous musk deer or hangul

- A. Keibul Lamjao National Park, Manipu
- B. Bandhavgarh National Park, Madhya pradesh
- C. Eaglenest Wildlife Sancturary, Arunachal Pradesh
- D. Dechigam National Park, Jammu & Kashmir

Answer: d



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

A. Biodiversity hotspots

B. Amazon rainforest

C. Himalayan region

D. Wildlife safari parks

Answer: d



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75. Alexander Von Humbolt described for the first time

A. laws of limiting factor

B. species area relationships

C. population growth equation

D. ecological biodiversity

Answer: b



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76. The region of Biosphere Reserve which is legally protected and where no human activity is allowed is known as

- A. buffer zone
- B. transition zone
- C. restoration zone
- D. core zone

Answer: d



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

- A. wildlife safari parks
- B. sacred groves
- C. botanical gardens

D. seed banks

Answer: b

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78. Pollen grains can be stored for several years in liquid nitrogen having a temperature of

A. -120°C

B. -80°C

C. -196°C

D. -160°C

Answer: c

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1. Assertion : Domesticated animals and cultivated plantes are not included in wild life.

Reason : They flourish only under humber care.

- A. If both A and R are true and R is the correct explanation of A.
- B. If both A and R are true but R is not the correct explanation of A.
- C. If A is true but R is false.
- D. If both A and R are false.

Answer: A



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2. Assertion : Tiger is a rare species.

Reason : Tiger population is very small.

- A. If both A and R are true and R is the correct explanation of A.
- B. If both A and R are true but R is not the correct explanation of A.

C. If A is true but R is false.

D. If both A and R are false.

Answer: D

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3. Assertion : Cleanliness resorted to by man is harmful for the wild life.

Reason : It deprives the scavengers (vulture, kites) of food and also destroys their habitats.

A. If both A and R are true and R is the correct explanation of A.

B. If both A and R are true but R is not the correct explanation of A.

C. If A is true but R is false.

D. If both A and R are false.

Answer: A

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4. Assertion : Threatened species should be given preference over others in the conservation programme.

Reason : All the life supporting systems (air, water and land) should be conserved.

- A. If both A and R are true and R is the correct explanation of A.
- B. If both A and R are true but R is not the correct explanation of A.
- C. If A is true but R is false.
- D. If both A and R are false.

Answer: B



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5. Assertion : To prevent hunting is not wild life conservation in the real sense.

Reason : Some animals may multiply to the extent that they exhaust the food supply.

- A. If both A and R are true and R is the correct explanation of A.
- B. If both A and R are true but R is not the correct explanation of A.
- C. If A is true but R is false.
- D. If both A and R are false.

Answer: A



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6. Assertion : Tiger population of India has increased to 4000 from 1827 in 1972.

Reason : Tiger is a prolific breeder.

- A. If both A and R are true and R is the correct explanation of A.
- B. If both A and R are true but R is not the correct explanation of A.
- C. If A is true but R is false.

D. If both A and R are false.

Answer: C



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7. Assertion : Improvement cutting is an important practice in forest management.

Reason : It provides space for growing new healthy trees.

A. If both A and R are true and R is the correct explanation of A.

B. If both A and R are true but R is not the correct explanation of A.

C. If A is true but R is false.

D. If both A and R are false.

Answer: A



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8. Assertion : Social forestry programme grows trees for fuel, fodder and fruits in rural areas.

Reason : Production plantation grows trees for use in industries.

- A. If both A and R are true and R is the correct explanation of A.
- B. If both A and R are true but R is not the correct explanation of A.
- C. If A is true but R is false.
- D. If both A and R are false.

Answer: B



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9. Assertion : Using dung as fuel greatly reduces grain production.

Reason : Dung used as manure increases crop yield.

- A. If both A and R are true and R is the correct explanation of A.
- B. If both A and R are true but R is not the correct explanation of A.

C. If A is true but R is false.

D. If both A and R are false.

Answer: A



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10. Assertion : Forests reduce atmospheric pollution.

Reason: Forests increase rainfall.

A. If both A and R are true and R is the correct explanation of A.

B. If both A and R are true but R is not the correct explanation of A.

C. If A is true but R is false.

D. If both A and R are false.

Answer: B



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1. Why do higher organisms shift to sexual mode of reproduction in spite of these being complex?

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2. Write one advantage and one disadvantage of cleistogamy in flowering plants.

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3. A male honeybee has 16 chromosomes whereas, its female has 32 chromosomes. Give one reason.

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4. The prophase I stage of meiosis plays a vital role in r-DNA formation.

Justify with reason.

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5. Write the names of the following :

(a) A 15 million years ago primate that was ape-like.

(b) A 2 million years ago primate that lived in East-African grasslands.

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6. What is aminoacylation ? State its significance.

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7. Select the homologous structures from the combinations given below :

Forelimbs of whales and bats

Tuber of potato and sweet potato

Eyes of octopus and mammals

Thorns of Bougainvillea and tendrils of Cucurbita. (b) State the kind of evolution they represent.

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8. Why is a person with cuts and bruises following an accident administered tetanus antitoxin? Give reasons.

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9. By taking two examples how has bio-fortification helped in improving food quality.

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10. How does addition of a small amount of curd to fresh milk help formation of curd ? Mention a nutritional quality that gets added to the curd ?

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11. (a) Mention the difference in the mode of action of exonuclease and endonuclease. (b) How does restriction endonuclease function?

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12. What is bio-piracy? State the initiative taken by the Indian Parliament against it

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13. (a) Which conservation method is used to maintain species of wildlife in their natural habitats ?

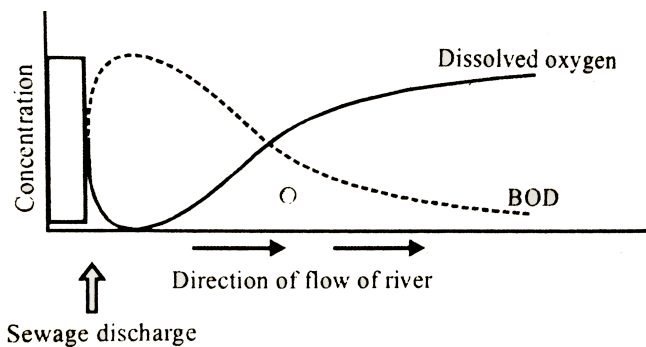
(b) Give atleast two differences between a national park and wildlife sanctuary.

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14. Study the graph given below and answer the question that follow ?

(i) What is relationship between dissolved oxygen and biochemical oxygen Demand (BOD) ?

(ii) Mention their effect on aquatic life in the river.



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15. Where are the Leydig cells present ? What is their role in reproduction ?

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16. How to CU-T, CU-7 and hormone releasing IUDs act as contraceptive ?

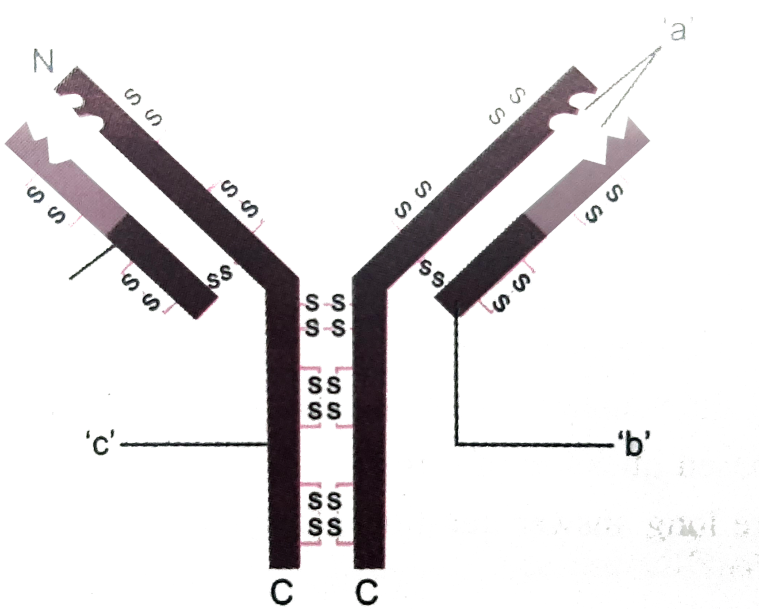
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17. What does the following equation represent ? Explain.

$$p^2 + 2pq + q^2 = 1$$

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18. Identify a, b and c in the schematic diagram of an antibody given here and answer the question :



- (i) Write the chemical nature of a antibody.
- (ii) Name the cells that produce antibodies in humans.
- (iii) Mention the type of immune response provided by an antibody.

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19. Explain how Eli Lilly, an American company produced insulin by recombinant DNA technology.

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20. Explain out-breeding out crossing and cross-breeding practices in animal husbandry.



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21. (a) Organic farmers prefer biological control of diseases and pests to the use of chemicals for the purpose justify

(b) Give example of a bacterium a fungus and an insect that are used as bio-control agents

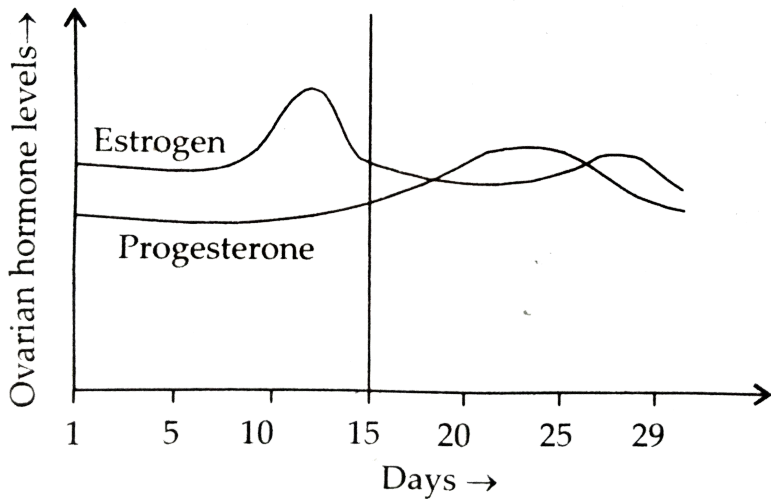


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22. Mention the reasons for difference in ploidy of zygote and primary endosperm nucleus in an angiosperm.



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23.

Read the

graph given above and correlate the uterine events that take place according to the hormonal levels on

(i) 6 - 15 days

(ii) 16 - 25 days

(iii) 26 - 28 days (if the ovum is not fertilised)

(b) Specify the sources of the hormones mentioned in the graph.



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24. During a fire in an auditorium, a large number of assembled guests get burnt beyond recognition. Suggest and describe a modern technique

that can help hand over the dead to their relatives.

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25. Ajay read in newspaper that the Govt. was planning to clean up the Yamunas river as it had become highly polluted and its water was not fit for human consumption and other animals. Ajay discussed this issue with his teacher who explained to him the reasons.

Read the above passage and answer the following questions :

- (i) What is water pollution ?
- (ii) What are its causes ?
- (iii) Why is Yamuna water not fit for human consumption ?

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26. How does developmet of a male gametophyte or pollen take place ?

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27. Draw a labelled diagram of a sectional view of human seminiferous tubule.

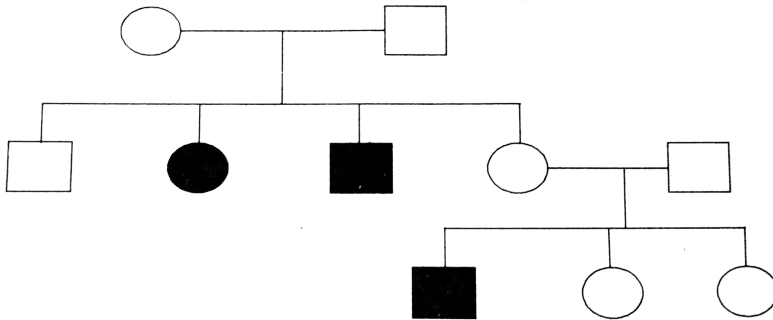
(b) Differentiate between gametogenesis in human males and females on the basis of

(i) time of initiation of the process.

(ii) Products formed at the end of the process.

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28. Study the given pedigree chart and answer the question that follow.



(a) Is the trait recessive or dominant ?

(b) Is the trait sex-linked or autosomal ?

(c) Give the genotypes of the parents in generation I and of their third and fourth child in generation.



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29. (a) Why is human ABO blood group gene considered a good example of multiple alleles?

(b) Work out a cross up to F_1 generation only, between a mother with blood group A (Homozygous) and the father with blood group B (Homozygous). Explain the pattern of inheritance exhibited.



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30. (a) What is an ecological pyramid ? Compare the pyramids of energy , biomass and numbers.

(b) Write any two limitations of ecological pyramids.



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31. (a) Name the two growth models that represent population growth and draw the respective growth curves they represent.

(b) State the basis for the difference in the shape of these curves.

(c) Which one of the curves represent the human population growth at present? Do you think such a curve is sustainable ? Give reason in support of your answer.



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