Question Bank

Biodiversity, Wildlife and Toxicoogy

1. Biodiversity refers to:
   a) Variety of climates
   b) Variety of living organisms
   c) Variety of rocks
   d) Variety of landscapes

2. Which of the following is NOT a type of biodiversity?
   a) Genetic diversity
   b) Species diversity
   c) Atmospheric diversity
   d) Ecosystem diversity

3. Biodiversity at the genetic level refers to:
   a) Variety of ecosystems
   b) Variety of species
   c) Variety of genes within a species
   d) Variety of habitats

4. The scope of biodiversity includes:
   a) Only plants and animals
   b) Variety of genes, species, and ecosystems
   c) Only ecosystems
   d) Only endangered species

5. Characterization of biodiversity helps in:
   a) Identifying pollution
   b) Understanding biodiversity components
   c) Controlling weather
   d) Enhancing soil fertility

6. Which type of biodiversity deals with the variety of ecosystems in a region?
   a) Genetic diversity
   b) Species diversity
   c) Ecosystem diversity
   d) Population diversity

7. Species diversity is the:
   a) Variety of ecosystems
   b) Number of species and their abundance in a region
   c) Variation in genes within a species
   d) Number of habitats

8. Genetic diversity is important because it:
   a) Helps species adapt to changing environments
   b) Controls ecosystem stability
   c) Increases species number
   d) Reduces pollution

9. Alpha diversity refers to:
   a) Diversity between ecosystems
   b) Diversity within a single habitat or ecosystem
   c) Diversity across different regions
   d) Diversity between continents
10. Beta diversity measures:
   a) Diversity within a habitat
   b) Difference in species between two habitats
   c) Diversity across the globe
   d) Genetic variation

11. Gamma diversity is:
   a) Total species diversity in a large region
   b) Diversity within a single ecosystem
   c) Diversity of genes
   d) Diversity of plants only

12. Biodiversity maintains ecosystem stability by:
   a) Increasing species extinction
   b) Providing ecological balance
   c) Increasing pollution
   d) Decreasing genetic variation

13. Which of the following is an economic value of biodiversity?
   a) Medicinal plants
   b) Pollination of crops
   c) Cultural benefits
   d) Both a and b

14. Ethical values of biodiversity emphasize:
   a) Exploiting resources
   b) Conserving species for their own right
   c) Economic profit only
   d) Industrial development

15. In-situ conservation refers to:
   a) Conserving species in their natural habitats
   b) Conserving species in zoos
   c) Using biotechnology for conservation
   d) Preserving seeds in seed banks

16. Ex-situ conservation includes:
   a) National parks

b) Wildlife sanctuaries
c) Botanical gardens and zoos
d) Protected forests

17. Which one is a method of in-situ conservation?
a) Seed banks
b) Gene banks
c) Wildlife sanctuaries
d) Tissue culture

18. Wildlife management is primarily concerned with:
a) Urban planning
b) Protection and sustainable use of wildlife
c) Agriculture development
d) Mining operations

19. Wildlife includes:
a) Only mammals
b) Only plants
c) All undomesticated animals and plants
d) Only birds and insects

20. Endangered species are:
a) Species abundant everywhere
b) Species at risk of extinction
c) Species found only in zoos
d) Species that migrate annually

21. A rare species is one that:
a) Is extinct
b) Has a small population but not necessarily endangered
c) Is common everywhere
d) Is found only in captivity

22. Which factor is NOT natural affecting wildlife?
a) Predation
b) Disease
c) Pollution
d) Competition

23. Anthropogenic factors affecting wildlife include:
a) Climate change
b) Habitat destruction
c) Natural disasters
d) Predation

24. Malvan Marine Wildlife Sanctuary is located in:
    a) Maharashtra
    b) Kerala
    c) Gujarat
    d) Assam

25. Kaziranga National Park is famous for the conservation of:
    a) Asiatic Lion
    b) One-horned Rhinoceros
    c) Bengal Tiger
    d) Elephants

26. Gir National Park is known for protecting:
    a) Tigers
    b) Asiatic Lions
    c) Elephants
    d) Snow Leopards

27. Bharatpur Wildlife Sanctuary is famous for:
    a) Marine life
    b) Migratory birds
    c) Tigers
    d) Elephants

28. Tadoba-Andhari National Park is located in:
    a) Maharashtra
    b) Rajasthan
    c) Madhya Pradesh
    d) Assam

29. Radhanagari Wildlife Sanctuary is known for:
    a) Marine biodiversity
    b) Rich tropical forests and wildlife in Maharashtra
    c) Desert wildlife
    d) Snow leopard habitat

30. One major threat to Kaziranga National Park is:
    a) Poaching
    b) Industrial pollution
    c) Overfishing
    d) Urbanization

31. The primary target animal in Gir National Park is:
    a) Indian Leopard
    b) Asiatic Lion
    c) Indian Elephant
    d) One-horned Rhinoceros

32. Toxicology is the study of:
    a) Medicines
    b) Harmful effects of chemicals on living organisms
    c) Water pollution
    d) Air quality

33. Which is NOT a classification of toxic agents?
    a) Chemical toxins
    b) Biological toxins
    c) Physical toxins
    d) Astronomical toxins

34. Organophosphate pesticides act by:
    a) Inhibiting acetylcholinesterase enzyme
    b) Causing fungal infections
    c) Destroying cell walls
    d) Increasing photosynthesis

35. Organochlorine pesticides are known for:
    a) Being highly biodegradable
    b) Persistent environmental pollutants
    c) Safe to use in all crops
    d) Causing no harm to wildlife

36. Carbamate pesticides act by:
    a) Inhibiting acetylcholinesterase but are less persistent than organophosphates
    b) Enhancing growth of insects
    c) Killing bacteria
    d) Acting as fertilizers

37. Toxicology is best defined as:

    a) Study of medicinal plants

    b) Study of poisons and their effects on living organisms

    c) Study of microbes

    d) Study of nutrition

38. Lead toxicity mainly affects:
    a) Nervous system
    b) Bones only
    c) Skin
    d) Muscle growth

39. Mercury toxicity affects the:
    a) Liver and kidneys
    b) Nervous system and brain
    c) Bones

d) Skin

40. Cadmium toxicity primarily targets:
    a) Liver
    b) Kidneys
    c) Lungs
    d) Skin

40. Mycotoxins are toxic substances produced by:
    a) Bacteria
    b) Fungi
    c) Viruses
    d) Algae

41. Alpha diversity is:

    a) Diversity between ecosystems b) Diversity within a specific area or ecosystem

    c) Global diversity d) Diversity due to evolution

42. A common mycotoxin is:
    a) Aflatoxin
    b) Cyanide
    c) Mercury
    d) Lead

42. Toxicology is used in:
    a) Environmental protection
    b) Medicine and pharmaceuticals
    c) Forensic science
    d) All of the above

43. Which of the following is NOT a level of biodiversity?
    a) Alpha
    b) Beta
    c) Delta
    d) Gamma

44. An example of ex-situ conservation is:
    a) National Park
    b) Zoo
    c) Wildlife Sanctuary
    d) Biosphere Reserve
45. Biodiversity hotspots in India are:

    a) 1 b) 2 c) 3 d) 4

46. The scope of wildlife management includes:

a) Species conservation b) Habitat management

c) Human–wildlife conflict mitigation d) All of the above

47. The main reason for species becoming endangered is:

a) Habitat destruction

b) Increased rainfall

c) Overpopulation of species

d) Increased biodiversity

48. Toxic agents are classified based on:

a) Origin b) Target organ

c) Chemical nature d) All of the above

49. The Asiatic lion is found in:

a) Kaziranga National Park

b) Gir National Park

c) Bharatpur Sanctuary

d) Malvan Sanctuary

50. Tadoba-Andhari is famous for—

a) Asiatic lions b) Tigers c) Crocodiles d) Siberian cranes

51. Which pesticide group is banned due to persistence and bioaccumulation?

a) Organophosphates

b) Organochlorines

c) Carbamates

d) Pyrethroids

52. Which heavy metal accumulates in the brain and causes neurotoxicity?

a) Lead and Mercury b) Cadmium only c) Zinc only d) Chromium

53. A factor that influences species richness between habitats is:

a) Beta diversity

b) Alpha diversity

c) Gamma diversity

d) Habitat uniformity

54. Minamata disease is caused by:

a) Organic mercury

b) Lead

c) Cadmium

d) Arsenic

55. Conservation of biodiversity is important because:
    a) It maintains ecosystem functions
    b) It provides economic resources
    c) It has ethical and aesthetic value
    d) All of the above

56. A rare species can become endangered if:
    a) Habitat loss occurs
    b) Population increases
    c) Climate improves
    d) Food availability increases

57. The main target animal of Tadoba-Andhari National Park is:
    a) Elephant
    b) Tiger
    c) Deer
    d) Lion

58. Toxicology helps in understanding:
    a) Safe dosage of drugs
    b) Effect of pollutants on organisms
    c) Mechanism of poisoning
    d) All of the above

Long Answer Question

Unit I: Biodiversity

1. Define biodiversity. Explain its types with suitable examples.
2. Discuss the scope of biodiversity and how it is characterized.
3. Define alpha, beta, and gamma diversity and explain their significance in biodiversity studies.
4. Discuss the ecological, economic, and ethical importance of biodiversity.
5. Explain the concept of in-situ and ex-situ conservation strategies with examples.
6. Discuss the threats to biodiversity and the role of conservation in biodiversity protection.
7. Write an account of Kaziranga's and add a note on the significance of the Indian one-horned rhinoceros conservation.
8. What is toxicology and describe mode of action of metal toxicity.

9. How do human activities affect biodiversity? Suggest measures to reduce this impact.
10. Write a detailed note on the characterization of biodiversity at molecular and ecosystem levels.

Unit II: Wildlife Management

11. Define wildlife and wildlife management. Discuss their scope and significance.
12. Explain the categories of wildlife such as rare, endangered, vulnerable, and endemic species with examples.
13. Describe the natural factors affecting wildlife populations.
14. Explain anthropogenic factors that influence wildlife and suggest mitigation strategies.
15. What is biodiversity and add a note on three main types of biodiversity.
16. Write a detailed note on the objectives and challenges of wildlife management.
17. Discuss the importance of wildlife sanctuaries and national parks in conservation efforts.
18. Provide a brief description of Malvan Marine Wildlife Sanctuary, its location, history, target animals, and threats.
19. Discuss the significance of Kaziranga National Park and the measures taken for the conservation of one-horned rhinoceros.
20. Write a detailed note on Gir National Park with reference to Asiatic lions, its locality, and threats faced by the park.
21. Explain the importance of Bharatpur Wildlife Sanctuary in conserving migratory birds.
22. Discuss the key features of Tadoba-Andhari National Park and its role in tiger conservation.
23. Describe the biodiversity and conservation challenges of Radhanagari Wildlife Sanctuary.

Unit III: Toxicology

23. Define toxicology and explain its classification.
24. Discuss the mode of action and effects of organophosphate pesticides on living organisms.
25. Explain the environmental impact of organochlorine pesticides and why many are banned.
26. Describe carbamate pesticides and their effects on non-target species.
27. Discuss the toxic effects of lead exposure on human health and the environment.
28. Explain mercury toxicity and its sources, bioaccumulation, and effects.
29. Describe cadmium toxicity, its sources, and effects on living organisms.
30. Define mycotoxins and explain their sources, types, and effects on health.
31. Discuss the applications of toxicology in environmental science and human health.

Short Answer Question

1. What is biodiversity?
2. Name the three main types of biodiversity.
3. Give an example of genetic diversity.

4. What does species diversity refer to?
5. Define ecosystem diversity.
6. Why is genetic diversity important for a species?
7. What is the difference between species richness and species evenness?
8. Give an example of high species diversity in an ecosystem.
9. How does ecosystem diversity contribute to biodiversity?
10. Name two ecosystems that show high biodiversity.

11. What does the scope of biodiversity study include?
12. How can biodiversity be characterized at the genetic level?
13. What tools are used for characterizing biodiversity at the molecular level?
14. Why is biodiversity characterization important for conservation?
15. Define biodiversity hotspot.
16. Name any two global biodiversity hotspots.
17. What role do ecological niches play in biodiversity?
18. What is meant by biodiversity inventory?
19. How does biodiversity vary with latitude?
20. What is the relationship between biodiversity and ecosystem stability?

21. How is genetic diversity measured?
22. What is allelic diversity?
23. Why is maintaining genetic diversity important for evolution?
24. Define species evenness.
25. What is species richness?
26. How does species diversity affect ecosystem function?
27. What is an ecological community?
28. How do ecosystem services depend on biodiversity?
29. Give an example of ecosystem diversity in aquatic systems.
30. How does habitat diversity contribute to ecosystem diversity?

31. Define alpha diversity.
32. What does beta diversity measure?
33. Explain gamma diversity.
34. Give an example of an ecosystem with high alpha diversity.
35. How is beta diversity related to species turnover?
36. Why is gamma diversity important at the landscape level?
37. How can beta diversity indicate habitat fragmentation?
38. What is the significance of measuring alpha diversity for conservation?
39. Differentiate between beta and gamma diversity.
40. How do conservationists use alpha, beta, and gamma diversity in management?

41. List two ecological benefits of biodiversity.
42. Significance of wildlife management
43. Rare and Endangered species
44. How does biodiversity help in climate regulation?
45. Name two economic benefits of biodiversity.
46. How is biodiversity important for medicine?
47. What are ethical values of biodiversity conservation?
48. Why is biodiversity important for food security?
49. Explain how biodiversity supports pollination.

50. How does biodiversity contribute to soil fertility?
51. What is the role of biodiversity in maintaining ecosystem resilience?
52. Importance of biodiversity.
53. Gir national park
54. Organophosphate pesticide
55. Application of Toxicology
56. Name an example of a species that has cultural significance.

51. What is in-situ conservation?
52. Give an example of in-situ conservation.
53. Define ex-situ conservation.
54. Name two ex-situ conservation methods.
55. What is a gene bank?
56. How do protected areas contribute to conservation?
57. What role do botanical gardens play in conservation?
58. Mention one international treaty related to biodiversity conservation.
59. How can local communities help in biodiversity conservation?
60. Why is awareness and education important for biodiversity conservation?