

BRAIN INTERNATIONAL SCHOOL

BIOLOGY Assignment

Class XII

Oct 18

CH: Environmental Issues

1. Why are lichens regarded as pollution indicators?
2. Why is the use of unleaded petrol recommended for motor vehicles equipped with catalytic converters?
3. State the consequence if the electrostatic precipitator of a thermal plant fails to work. Mention any four methods by which the vehicular air pollution can be controlled.
4. Eutrophication is the natural aging of a lake. Explain.
5. Why is the concentration of toxins found to be more in the organisms occupying the highest trophic level in the food chain in a polluted water body? Explain with the help of a suitable example.
6. Give reasons why there is a continuous increase in DDT content in different trophic levels of the chain. Name the phenomenon responsible for the increase in DDT content.
7. A factory drains its waste water into the nearby lake. It has caused algal bloom.
 - (a) How was the algal bloom caused?
 - (b) What would be the consequences?
 - (c) Name the phenomenon that caused it.
8. What is the relationship between dissolved oxygen and biochemical oxygen demand (BOD)? Mention their effect on aquatic life in the river.
9. Explain accelerated eutrophication. Mention any two consequences of this phenomenon.
10. Mention how e-waste is produced and disposed off. Write the solution for its treatment.
11. What can be the effect of discharging hot(thermal) water into a water body on the organisms in it.
12. Expand BOD.

At a particular segment of a river near a sugar factory, BOD is much higher than the normal level. What is it indicative of? What will happen to the living organisms in this part of the river? Under what conditions will the BOD be lowered in the river? How will it affect the aquatic life?

13. Write an account on Montreal Protocol.
14. Name any one of the greenhouse gases and its possible source of production on a large scale. What are harmful effects of it?
15. It is a common practice to plant tree and shrubs near the boundary walls of building. What purpose do they serve?
16. What depletes ozone in the stratosphere? How does this affect human life?
17. What is meant by ozone shield? Name two ozone depleting substances. How do the ozone-depleting substances affect the ozone shield? Write one damaging effect of ozone depletion on humans and plants respectively.
18. What is El Nino effect? Explain how it accounts for biodiversity loss.
19. Discuss the following:
 - (a) Chipko Movement
 - (b) Scrubber
 - (c) Radioactive wastes.
20. Domestic sewage contains certain substances or salts which are difficult to remove. Name any four of them.

CH: Microbes in Human Welfare

21. What are flocs?
22. Name the bacterium that was used as biopesticide for the first time.
23. How does addition of a small amount of curd to fresh milk help in the formation of curd? Mention a nutritional quality that gets added to the cur.
24. Name the bacterium responsible for the large holes seen in “Swiss Cheese”. What are these holes due to?
25. Name the source of statin and state its action on the human body.
26. Name the source of cyclosporine-A. How does this bioactive molecule function in our body?
27. Name the enzyme produced by *Streptococcus* bacterium. Explain its importance in medical sciences.
28. Why are the fruit juices bought from market clearer as compared to those made at home?
29. Name the two different categories of microbes naturally occurring in sewage water. Explain their role in cleaning sewage water into usable water.

30. Explain the role of baculoviruses as biological control agents. Mention their importance in organic farming.
31. Explain the sequence of events occurring in a biogas plant.
32. What are biopesticides?
33. How was penicillin discovered?
34. What are the harmful effects of chemical pesticides?
35. How has the bacterium *Bacillus thuringiensis* helped us in controlling caterpillar of insect pests?
36. Describe critically the main ideas behind the biological control of pests and diseases.
37. Legumes fertilise the soil but cereals do not. Discuss.
38. Why are biogas plants more suitable and advantageous in rural areas?
39. What is Chakravarty bug? Give its scientific name and its application?

CH: Biodiversity

40. Distinguish between in-situ and ex-situ approaches of conservation of biodiversity.
41. What is meant by alien species invasion? Name one plant and animal alien species that are a threat to our Indian native species.
42. Where would you expect more species diversity- in tropics or polar regions? Justify your answer.
43. The stability of a community depends on its species richness. Write how did David Tillman showed this experimentally.
44. Name three important components of biodiversity.
45. What are sacred grooves? What is their role in conservation?
46. How is the sixth episode of extinction of species on earth different from the five earlier episodes?
47. What are hotspots of biodiversities? List four main criteria for determining a particular place as a hotspot. Name two hotspots which are located in India.
48. What is red data book? What is the utility of this document who publishes this book?

CH: Biotechnology: Principles and Processes

49. Explain the contribution of *Thermus aquaticus* in the amplification of a gene of interest.
50. What is genetic engineering?
51. Why and how bacteria can be made competent?

52. What are the uses of PCR?
53. What is downstream processing?
54. What is a plasmid?
55. Explain how sticky ends are formed and get joined in vector DNA and foreign DNA?
56. Why is *Agrobacterium tumifaciens* a good cloning vector?
57. What are recombinant proteins? How do bioreactors help in their production?
58. What are the major steps involved in gene cloning?
59. What is microinjection?
60. What is the function of DNA ligase?
61. How can the DNA be cut at specific locations? Explain.

CH : ORGANISMS AND POPULATIONS

62. Describe Biotic and abiotic components of an ecosystem
63. .What do you mean by Eurohaline and Stenohaline animals
64. . Why mammals are considered best suited organisms amongst animal world
65. . What is Diapause ?
66. Write short note on Exponential and Logistic growth of an organism
67. Describe the following population interactions with ex
Parasitism , Commensalism , Predation , Competition , Ammensalism