



Bio-Botany

I. Choose the correct answer:

[8 x 1 = 8]

- Which of the following is / are not a natural ecosystem?
 - Forest ecosystem
 - Rice field
 - Grassland ecosystem
 - Desert ecosystem
- Which one is in descending order of a food chain
 - Producers → Secondary consumers → Primary consumers → Tertiary consumers
 - Tertiary consumers → Primary consumers → Secondary consumers → Producers
 - Tertiary consumers → Secondary consumers → Primary consumers → Producers
 - Tertiary consumers → Producers → Primary consumers → Secondary consumers
- One green house gas contributes 14% of total global warming and another contributes 6%. These are respectively identified as
 - N₂O and CO₂
 - CFCs and N₂O
 - CH₄ and CO₂
 - CH₄ and CFCs
- New world species of cotton
 - Gossypium arboretum*
 - G. herbaceum*
 - Both a and b
 - G. barbadense*
- Dwarfing gene of wheat is
 - pal 1
 - Atomita 1
 - Norin 10
 - pelita 2
- Plants having similar genotypes produced by plant breeding are called
 - clone
 - haploid
 - autopolyploid
 - genome
- Tamarindus indica* is indigenous to
 - Tropical African region
 - South India, Sri Lanka
 - South America, Greece
 - India alone
- Assertion: Turmeric fights various kinds of cancer
Reason: Curcumin is an anti-oxidant present in turmeric
 - Assertion is correct, Reason is wrong
 - Assertion is wrong, Reason is correct
 - Both are correct
 - Both are wrong

II. Answer any 4 of the following questions:

[4 x 2 = 8]

Question Number 12 is compulsory

9. Pyramid of energy is always upright. Give reasons
10. What will happen if all producers are removed from ecosystem?
11. What is CCS?
12. What is ozone hole?
13. How are microbial inoculants used to increase the soil fertility?
14. What is entrepreneurial botany?

III. Answer any 3 of the following questions:

[3 x 3 = 9]

Question Number 17 is compulsory

15. What is food chain? Construct the food chain with the following data.
Hawk, plants, frog, snake, grasshopper.
16. What is Green- house effect and Global warming?
17. Write a note on heterosis.
18. Write a short note on any 2 medicinal plants.
19. Explain afforestation with a case study.

IV. Answer the following questions:

[2 x 5 = 10]

20. a. Explain pond ecosystem.
(or)
b. what are the effects of deforestation and benefits of agroforestry?
21. a. Give an account of organic agriculture.
(or)
b. Give an account of Traditional system of medicines.

Note: Separate paper for botany and zoology

Bio-Zoology

I. Choose the correct answer:

[8 x 1 = 8]

1. The use of microorganism metabolism to remove pollutants such as oil spills in the water bodies is known as
a) Biomagnification b) Bioremediation c) Biomethanation d) Bioreduction
2. Conservation of biodiversity within their natural habitat is
a) Insitu conservation b) Exsitu conservation c) In vivo conservation d) In vitro conservation
3. Who introduced the term biodiversity?
a) Edward Wilson b) Walter Rosen c) Norman Myers d) Alice Norman
4. Organisms which can survive a wide range of temperature are called
a) Ectotherms b) Eurytherms c) Endotherms d) Stenotherms
5. How many amino acids are arranged in the two chains of Insulin?
a) Chain A has 12 and Chain B has 13 b) Chain A has 21 and Chain B has 30 amino acids
c) Chain A has 20 and chain B has 30 amino acids d) Chain A has 12 and chain B has 20 amino acids.
6. ELISA is mainly used for
a) Detection of mutations b) Detection of pathogens
c) Selecting animals having desired traits d) Selecting plants having desired traits
7. Allergy involves
a) IgE b) IgG c) IgA d) IgM
8. The purpose of biological treatment of waste water is to _____
a) Reduce BOD b) Increase BOD c) Reduce sedimentation d) Increase sedimentation

II. Answer any 4 of the following questions:

[4 x 2 = 8]

Question Number 14 is compulsory

9. Write notes on Eutrophication.
10. Define endemism.
11. Differentiate between Eurytherms and Stenotherms.
12. Explain hibernation and aestivation with examples.
13. What are interferons? Mention their role.
14. Define antibiotics.

III. Answer any 3 of the following questions:

[3 x 3 = 9]

Question Number 19 is compulsory

15. Discuss briefly about Ecosan toilets.
16. Compare and contrast the insitu and Exsitu conservation.
17. Differentiate *Natality* and *Mortality*.
18. Differentiate between Somatic cell gene therapy and germline gene therapy.
19. What is Bioremediation?

IV. Answer any 2 of the following questions:

[2 x 5 = 10]

20. a. Explain in detail about the three levels of biodiversity?
(or)
b. Explain the structure of immunoglobulin with suitable diagram.
21. a. Give an account of the properties of soil.
(or)
b. What are stem cells? Explain its role in the field of medicine.

-----ALL THE BEST-----