CBSE Class XII Biology Sample Paper – 9

Time: 3 Hours

General Instructions:

Total Marks: 70

1. All questions are compulsory.

- This question paper consists of five sections A, B, C and D. Section A contains 5 questions of one mark each, Section B is of 7 questions of two marks each, Section C is of 12 questions of three marks each and Section D is of 3 questions of five marks each.
- 3. There is no overall choice. However, an internal choice has been provided in **one** question of **2** marks, **one** question of **3** marks and all the **three** questions of **5** marks weightage. A student has to attempt only one of the alternatives in such questions.
- 4. Wherever necessary, the diagrams drawn should be neat and properly labelled.

	Section A	
1.	What is allogamy?	[1]
2.	What is electroporation?	[1]
3.	Why is the enzyme cellulase needed for isolating genetic material from plant of and not from animal cells?	ells [1]
4.	Name any two major ecosystems of the world.	[1]
5.	What is meant by pyramid of biomass?	[1]

Section B

6.	How would it affect fertilisation function normally?	n when the acrosome of a mammalian sperm	1 does not [2]
7.	If a double-stranded DNA has adenine in DNA.	s 20% of cytosine, then calculate the perc	entage of [2]
8.	Differentiate between DNA and	d RNA.	[2]
9.	<i>Bacillus thuringiensis</i> bacillus?	insecticidal protein. Why does this toxin n	ot kill the [2]
10	. Write a short note on adaptati OI What are the ill effects of algal	ons of plants to water scarcity. R bloom?	[2]
11	. Name the type of food chains in an aquatic and a terrestri	responsible for the flow of a larger fraction ial ecosystem, respectively. Mention one o	of energy difference

12. What is meant by the term 'breed'? What are the objectives of animal breeding? [2]

[2]

between the two food chains.

Section C

	13. [Define external fertilisation. Mention its disadvantages.	[3]
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- **14.** The first half of the menstrual cycle is called the proliferative phase and the follicular phase. Explain. [3]
- **15.** Describe the nature of inheritance of the ABO types of blood groups in humans. In which way does this inheritance differ from that of the plants in garden pea? [3]
- 16. A child is born having XXY chromosomes. What will be its sex? Mention any three such symptoms of this condition which may develop in such a child when he grows into adult.
- **17.** Identify 'a', 'b', 'c', 'd', 'e' and 'f' in the table given below:

No.	Syndrom	Cause	Characteristics of	Sex
	e		affected individuals	Male/Female/Both
1.	Down's	Trisomy of	'a' (i)	'b'
		21	(ii)	
2.	'c'	XXY	Overall masculine development	'd'
3.	Turner's	45 with XO	'e' (i) (ii)	'f'

- **18.** Suggest three early diagnostic symptoms or danger signals of cancer. [3]
- **19.** What are the achievements of the Green Revolution in our country in agricultural production? [3]
- **20.** How can crop varieties be made disease resistant to overcome food crisis in India? Explain. Name one disease-resistant variety in India of
 - (a) Wheat to leaf and stripe rust
 - (b) Brassica to white rust
- **21.** Besides better aeration and mixing properties, what other advantages do stirred bioreactors have over shake flasks? [3]

[3]

[3]

22. Two of the steps involved in producing nematode-resistant tobacco plant based on the process of RNAi are mentioned below. Write the missing steps in its proper sequence.



23. Write any three factors which control the size of population. [3]

24.

- (a) What are the criteria for determining a hotspot? [3]
- (b) Name the two most biodiversity-rich zones of India.

OR

How does the food chain get shortened and affect the biosphere?

Section D

25. Briefly describe some important adaptations which promote cross-pollination in angiosperms. [5]

OR

- (a) Describe the stages of oogenesis in human females.
- (b) Draw a labelled diagram of human ovum released after ovulation.
- **26.** Describe how the lac operon operates, both in the presence and absence of an inducer in *E. coli*. [5]

OR

Describe the Hershey and Chase experiment. Write the conclusion drawn by the scientists after their experiment.

27. What is vaccine? Briefly describe the several types of vaccines which are currently used.

OR

Explain the process of sewage water treatment before water can be discharged into natural water bodies. Why is this treatment essential?