

CBSE
Class XII Biology
Sample Paper – 6

Time: 3 hrs

Total Marks: 70

General Instructions:

1. All questions are compulsory.
 2. This question paper consists of four 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.
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Section A

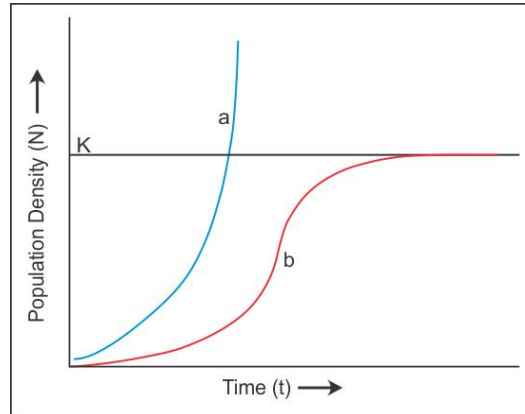
1. If the diploid number of chromosomes in an angiosperm plant is 18, what number would you expect in the endosperm and embryo of that plant? [1]
2. Name two cloning vectors. [1]
3. Why insulin was genetically engineered in bacteria? [1]
4. Give one example of predation. [1]
5. Name two main abiotic factors which affect the human environment. [1]

Section B

6. Explain the significance of the condition in humans in which the testes remain suspended in the scrotum outside the abdominal cavity. [2]
- 7.
- (a) In the Watson and Crick DNA model, a purine always pairs with pyrimidine. [2]
Why?
- (b) What property of the DNA structure can be implied from this?
8. A woman heterozygous for blood group 'B' marries a man with blood group 'AB'. Predict what population of children would have the same blood group as that of the father. Can you relate the sex of the children to their blood groups? Justify your answer. [2]
9. How is gene transfer in animals done? Give a suitable example. [2]
10. How diversity is at all levels generally conserved? [2]

OR

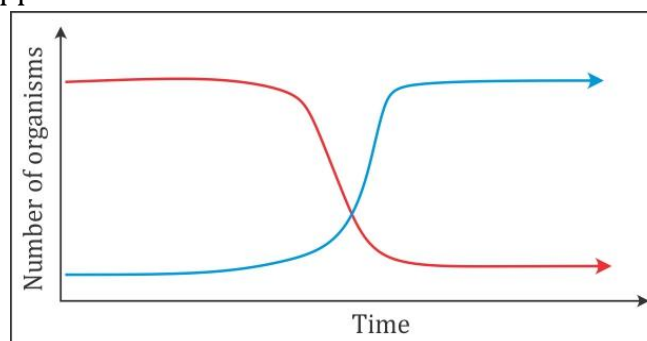
In the given population growth curve:



- (a) What does the regions falling below level 'K' in 'a' and 'b' indicate?
- (b) Which of the two is more realistic and why?
11. How do surgical procedures prevent conception in humans? Mention the way it is achieved in human males.
12. What bad effect has tobacco on respiratory system? Name two toxic substances present in tobacco.

Section C

13. What is the significance of pollen grain? [3]
14. Describe briefly about the various endocrine glands which control the process of spermatogenesis. [3]
15. A black-coloured cock when bred with a white-coloured hen produced steel-blue-coloured offspring called Andalusian chicken. When the steel-blue-coloured offspring were inbred, black, white and steel-blue -coloured progeny were obtained. [3]
- (i) This result is genetically explained as
(ii) What will be the expected ratio of the black, steel-blue and white progeny?
16. What is the purpose of proofreading in DNA synthesis? [3]
17. With the help of any two suitable examples, explain the effect of anthropogenic actions on organic evolution. [3]
18. What are the advantages of biological control over chemical control? [3]
19. What is inflammation? What is the cause of swelling at such sites? [3]
20. What are the applications of recombinant DNA technology? [3]
21. Give reasons: [3]
- (i) Plasmids are suitable for use as a vehicle DNA.
(ii) Restriction endonucleases are used in genetic engineering.
(iii) Recombinant DNA is formed of DNA from two sources. [3]
22. How do animals adapt to the cold environment? [3]
23. Two types of aquatic organisms in a lake show specific growth patterns as shown below, in a brief period of time. The lake is adjacent to an agricultural land extensively supplied with fertilisers. [3]



Answer the questions based on the facts given above:

- (i) Name the organisms depicting the patterns A and B.
- (ii) State the reason for the growth pattern seen in A.
- (iii) Write the effects of the growth patterns seen above.

OR

Define the term ectoparasite. Give any two examples.

24. Identify 'a', 'b', 'c', 'd', 'e' and 'f' in the table given below:

[3]

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

Section D

25. State any five characteristics of flowers pollinated by wind. [5]

OR

Briefly describe the structure of the human ovum.

26. Describe how the conditions which prevailed on the primordial earth for abiotic origin of life were similar to those created in the experiment of Miller and Urey?

[5]

OR

Briefly describe the mechanism of DNA replication.

27. With advancements in genetics, molecular biology and tissue culture, new traits have been incorporated into crop plants. Explain the main steps in breeding a new genetic variety of a crop. [5]

OR

Describe the asexual and sexual phases of the life cycle of *Plasmodium* which causes malaria in humans.