



St. Xavier's Sr. Sec. School

Delhi-54

Pre Board Examination 2016-17
Std. 12
09-01-2017

Set 2

Max. Marks : 70
Time : 3 hrs.

BIOLOGY

General Instructions:-

- i) This paper consists of 26 questions in five sections.
- ii) Section - A has 1 to 5 questions carrying one mark each.
- iii) Section - B has 6 to 10 questions carrying two mark each.
- iv) Section - C has 11 to 22 questions carrying three mark each.
- v) Section - D has 23 question of carrying four marks. (Value Based)
- vi) Section - E has 24 to 26 questions carrying five mark each.
- vii) There is internal choice in one 2 marks question, one 3 marks question and all 5 marks questions. Attempt only one of the choices in such questions.

SECTION –A (1 x 5 = 5 marks)

1. Zygote form the major link between one generation and those of next generation organism. What is the fate of the zygote in organism which show :-
 - i) Haplontic life style
 - ii) Diplontic life style
2. What is the sex and the composition of sex chromosomes in an individual with Klinefelter syndrome?
3. How is Typhoid fever spread?
4. Why does the toxin present in Bacillus thuringiensis not kill the bacterium?
5. What are palindromic nucleotide sequences?

SECTION – B (2 x 5 = 10 marks)

6. Write two differences between Parthenogenesis and Parthenocarpy in organisms?
7. Complete the following sentences with suitable words :-
 - i) _____ removes nucleotides from the ends of the DNA.
 - ii) _____ used in genetic engineering to join recombinant molecules of DNA, which are composed of DNA from different genomes.
 - iii) _____ is a pathogen of several Dicot plants to deliver a piece of DNA known as t DNA to transform normal cells into a tumour and direct these tumour cells to produce the chemicals required by the pathogen.
 - iv) _____ a technique to introduce the DNA into cells by bombarding it coated with gold particles.
8. What are EcoSan? (OR) Plastic Recycling for roads?
9. Why are small animals rarely found in polar regions? What are the other alternative modes to survive in some organisms to avoid adverse conditions who fail to leave their native places inspite of adverse conditions?
10. What is Accelerated Eutrophication?

SECTION - C (3 x 12 = 36 marks)

11. How are auto immune disease different from immuno deficiency disease? Give one example of each in human.



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12. By the end of 2002 the public transport in Delhi switched over to a new fuel. Name the fuel. Why is this fuel considered better? Explain giving reasons.
13. Why is Agrobacterium mediated genetic transformation described as natural genetic engineering in plants?
14. Represent diagrammatically the steps involved in rDNA technology.
15. If implementation of better techniques and new strategies are required to provide more efficient care and assistance to people, then why is there a statutory ban on aminocentesis. Write the uses of this technique and give reason to justify the ban.
16. Explain the process of fertilisation in human female, and trace the post fertilisation events in a sequential order up to implantation of the embryo.
17. The sequence in one of the strands of DNA is TAGCATGAT.
 - i) Give the base sequence of its complementary strand.
 - ii) How are these base pairs held together in a DNA molecule?
 - iii) Explain the base complementary pairing rule. Name the scientist who framed this rule.
18. Given below are the events that are observed in artificial hybridisation programme. Arrange them in the correct sequential order in which they are followed in the hybridisation programme.
 - a) Re bagging
 - b) selection of parents
 - c) bagging
 - d) dusting the pollen on stigma
 - e) emasculation
 - f) collection of pollens from male parent
19.
 - i) State the principle of independent assortment.
 - ii) How would the following affect the phenomenon of independent assortment.
 - a) Crossing over
 - b) Linkage

(OR)

Name the genes that constitute an operon. How does Lac Operon get switched on in the presence of Lactose?
20.
 - a) What is meant by addictive disorder?
 - b) Name any two opiate narcotics.
 - c) Mention any two ways how opiate narcotics affect human body.
21. What is the key difference between Primary and secondary sewage treatment?
22. How is single cell protein produced? In what ways it is useful to man?

SECTION – D (1 x 4 = 4 marks)

23. Rahul is a small scale farmer and holds 2 acres of land. He would like to increase the yield in his farm. He is not convinced with his friend's advice of using more fertilizers and pesticides to get better yield. He also plans to have an apiary in his small farm. Answer the following questions based on the information given above :
 - a) What values have been promoted in the above case?
 - b) Suggest some ways by which Rahul can increase his yield without compromising his ideals.
 - c) In which way can setting up of an apiary help Rahul?

SECTION - E (3 x 5 = 15 marks)

24.
 - a) Draw a schematic labelled diagram of a fertilized embryo sac of an angiosperm.
 - b) Describe the stages in embryo development in a dicot plant.

(OR)



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Draw a labelled diagram of an anther lobe at microspore-mother cell stage. Mention the roles of different wall layers of anther.

25. What is meant by semi conservative replication? How did Meselson and Stahl prove it experimentally?

(OR)

26. Show that the Darwin's natural selection is based on natural observation with an example for each. With the help of age pyramids explain the nature of a population.

(OR)

- a) What is meant by ecological succession? Explain how it occurs from a climax community?
b) What properties distinguish a pioneer community from a climax community?

-X-X-X-X-X-