



# St. Xavier's Sr. Sec. School

Delhi-54

**Pre Board Examination 2016**  
**Std. 12**  
**11-01-2016**

**Set 2**

**Max. Marks : 70**  
**Time : 3 hrs.**

## **BIOLOGY**

### GENERAL INSTRUCTIONS:

- (i) There are a total of 26 questions and five sections in the question paper. All questions are compulsory.
- (ii) Section A contains questions number 1 to 5, Very Short Answer type questions of 1 mark each.
- (iii) Section B contains questions number 6 to 10, Short Answer type I questions of 2 marks each.
- (iv) Section C contains questions number 11 to 22, Short Answer type II questions of 3 marks each.
- (v) Section D contains question number 23, Value Based Question of 4 marks.
- (vi) Section E contains questions number 24 to 26, Long Answer type questions of 5 marks each.
- (vii) There is no overall choice in the question paper, however, an internal choice is provided in one question of 2 marks, one question of 3 marks and all the three questions of 5 marks. In these questions, an examinee is to attempt any one of the two given alternatives.

### SECTION – A

1. What is lactational amenorrhoea?
2. Draw a labelled diagram of a nucleosome.
3. AaBb was crossed with aabb. What would be the phenotypic ratio of the progeny? Mention the term to denote this kind of cross.
4. Mention the strategy used to increase homozygosity in cattle for desired traits.
5. What is meant by withdrawal symptoms of drugs?

### SECTION – B

6. What is corpus luteum? Under what conditions does it under go degeneration?
7. Given below is a part of the template strand of a structural gene:-  
TAC CAT TAG GAT
  - a) Write its transcribed mRNA strand with its polarity.
  - b) Explain the mechanism involved in initiation of transcription of this strand.

OR

How can you say that the sex of a child is determined by the father and not by the mother?

8. Mention the property of plant cells that has helped to grow into a new plant in vitro conditions. Explain the advantages of micropropagation.
9. Diagrammatically represent the Lac Operon.
10. Expand GMO. Briefly write about its importance and problems.



# St. Xavier's Sr. Sec. School

Delhi-54

## SECTION - C

11. a) When and how does placenta develop in human female?  
b) How is the placenta connected to the embryo?  
c) How does placenta acts as an endocrine gland also ?

OR

Describe vasectomy and tubectomy with diagram.

12. Draw an enlarged view of T. S of a young anther showing different layers.
13. What is meant by R-strain and S-strain with which Griffith carried out his experiment of Diplococcus pneumoniae? What did he prove from these experiments?
14. Explain briefly how the principle of natural selection can be applied to the development of resistance in mosquitoes for DDT.
15. Inheritance pattern of ABO blood group in human shows dominance, co-dominance and multiple allelism. Explain each concept with the help of blood group genotypes.
16. Explain the role of the following in providing defence against infection in human body :-  
i) Histamines      ii) Interferons      iii) B-Cell
17. a) How is activated sludge produced during sewage treatment?  
b) Explain how sludge is used in Biogas production.
18. What are the three different barriers of innate immunity?
19. a) What is a Plasmid?  
b) What is meant by ADA deficiency? How is gene therapy a solution of this problem? Why is it not a permanent cure?
20. If a desired gene is identified in an organism for some experiments, explain the process of the following :  
i) Cutting this desired gene at specific location.  
ii) Synthesis of multiple copies of this desired gene.
21. How are different shapes of age pyramids for human population acquired?
22. Write critical notes on the following:-  
a) Eutrophication      b) Biological Magnification

## SECTION – D

23. Joy loves to play football and was selected as captain of the school team for the district level tournament. He also does social work. He attended a blood donation camp to donate blood and came to know that he was HIV positive. He lost interest in games and refused to play or study. He started counting his days. He remained absent from school for a long time. The Biology teacher visited his house and counselled him. Joy was back at school and also played the tournament.
- a) What sense of responsibility did the Biology teacher exhibit?  
b) A person detected to be HIV positive should be isolated in the society? Do you agree? Why/ Why not?  
c) How is AIDS not spread?



# St. Xavier's Sr. Sec. School

Delhi-54

## SECTION – E

24. Describe the process of decomposition of detritus.  
(OR)  
Mention the reasons for biodiversity losses.
25. Who proposed the DNA replication is semi-conservative? How was it experimentally proved?  
(OR)
- i) What are the three types of R.N.A?
  - ii) Which one of these has the shape of a clover leaf in two dimensional structures?
  - iii) How is each R.N.A related in the information flow during protein synthesis?
26. a) Explain the process of double fertilisation in angiosperms.  
b) List the changes each part of the fertilised ovule undergoes to develop into a seed.  
(OR)  
Distinguish between Spermatogenesis and Oogenesis.

-X-X-X-X-X-