



**OXFORD PUBLIC SCHOOL, RANCHI**  
**HALF YEARLY EXAMINATION**  
**SESSION 2016-2017**

**Class – XII**

**Time : 3 Hrs**

**Sub - Biology**

**F.M.: 70**

**Name** \_\_\_\_\_

**Class & Sec** \_\_\_\_\_

**Roll No** \_\_\_\_\_

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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 question no. 1-5, Very Short Answer type questions of one mark each.
- III. Section B contains question no. 6-10, Short Answer type I questions of two marks each.
- IV. Section C contains question no. 11-22, Short Answer type II questions of three marks each.
- V. Section D contains question no. 23, Value Based question of four marks.
- VI. Section E contains question no. 24-26, Long Answer type questions of five marks each.

**Section –A**

1. Why is RNA more reactive in comparison to DNA?
2. Name the cells that nourish the germ cells in the testes. Where are these cells located in the testes?

Or

Name the product of fertilization that forms the kernel of coconut. How does the Kernel differ from coconut water?

3. How is lactic acid bacteria beneficial to us other than helping in the curdling of milk?
4. What makes the nucleopolyhedrovirus a desirable biological control agent?
5. How is *Agrobacterium tumefaciens* able to transform a normal plant cell into tumors?

**Section –B**

6. Why does Bt toxin not kill the bacterium that produces it, but kills the insect that ingests it?
7. Explain the function of anaerobic sludge digester in a sewage treatment plant.
8. In Snapdragon, a cross between true breeding red flowered (RR) plants and true breeding white flowered (rr) plants showed a progeny of plants with all pink flowers.
  - (i) The appearance of pink flowers is not known as blending. Why?
  - (ii) What is the phenomenon known as?
9. What stimulates pituitary to release the hormone responsible for parturition? Give the name of hormone.
10. A patient showed symptoms of sustained high fever, stomach pain and constipation, but no blood clot in stools. Name the disease and its pathogen. Write the diagnostic test for the disease. How does the disease get transmitted?

### Section –C

11. Mention the names of hormones and their source organs produced only during pregnancy.
12. Why are human females rarely haemophilic? Explain how do haemophilic patients suffer?
13. Explain adaptive radiation with the help of a suitable example.

Or

How does industrial melanism support Darwin's Theory of natural selection? Explain.

14. (i) Why is t-RNA called adaptor molecule?  
(ii) What does the actual structure of t-RNA look like?  
(iii) Mention the role of the codons AUG and UGA during protein synthesis.
15. Trace the events that occur in human body to cause immunodeficiency, when HIV gains entry into body.
16. At what stage does Plasmodium gain entry into the human body? Write the different stages of its life cycle in the human body.
17. State the medicinal value and the bioactive molecules produced by Streptococcus, Monascus and Trichoderma.
18. Explain in sequence the process of amplification of gene of interest using polymerase chain reaction.
19. (i) Sickle cell anaemia in humans is a result of point mutation. Explain  
(ii) Write the genotypes of both the parents who have produced a sickle cell anaemia offspring.
20. (i) Why are selectable markers used in recombinant DNA technology? Name the selectable markers used in the cloning vector PBR-322.  
(ii) Write the palindromic sequence recognised by the restriction enzyme EcoRI.
21. Differentiate between geitonogamy and xenogamy in plants. Which one between the two will lead to inbreeding depression and why?
22. Briefly discuss the steps involved in DNA finger printing.

### Section –D

23. As we know, our rivers Ganga and Yamuna are getting polluted day by day.  
Many factories discharge sewage effluents into these rivers. The load of pollution in these rivers is also due to municipal sewage and many things thrown by people in the name of worship.  
The government has however taken steps to save these rivers.  
(i) What are the values shown by the people who throw waste in the river?  
(ii) How could we help in decreasing pollution of rivers?  
(iii) State some advantages of saving the rivers.  
(iv) State the action taken by government to stop pollution in these rivers.

### Section –E

24. (i) Draw a sectional view of a seminiferous tubule of a human. Label Sertoli cell, spermatogonia and Leydig cells on it and write their functions.  
(ii) Explain the role of pituitary and sex hormone in the process of spermatogenesis.

Or

- (i) Why does endosperm development precede embryo development in angiosperm seeds? State the role of endosperm in mature albuminous seeds.
- (ii) Describe with the help of three labelled diagrams the different embryonic stages that include mature embryo of dicot plants.

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

Or

Describe how lac operon operates both in presence and absence of an inducer in E.coli.

26. (i) Name the source from which insulin was extracted earlier. Why is this insulin no more used by diabetic people?
- (iii) Explain the process of synthesis of insulin by Eli Lilly Company. Name the technique used by the company.
  - (iv) How is the insulin produced by human body different from the insulin produced by the above mentioned company?

Or

How is transgenic tobacco plant protected against *Meloidogyne incognita*? Explain the procedure.

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