

**Guess Paper – 2014**  
**Class – XII**  
**Subject –Biology**

*This question paper consists of four sections A, B, C and D. Section A contains 8 questions. Section B contains 10 questions. Section C contains 9 questions and Section D contains 3 questions. All questions are compulsory. There is an overall choice. However, an internal choice is provided in one question of two marks and one question of three marks. Question numbers 1 to 8 carry one mark each. Question numbers 9 to 18 carry two marks each. Question numbers 19 to 27 carry three marks each and Question numbers 28 to 30 carry five marks each. Use of calculators is not permitted. However, you may use log tables, if necessary.*

*Time allowed: 3 hours*

*Maximum Marks: 70*

SECTION A

1. State the theory of biogenesis.
2. What is aplotic zone?
3. State the principle on which ELISA works.
4. A moss plant produces a large number of antherozoids but relatively less number of eggs. Why?
5. How do pollen grains of *Vallisneria* protect themselves?
6. What are complementary genes?
7. What are genetic scissors?
8. Write the scientific name of the microbe used for fermenting fruit juice?

SECTION B

9. Explain the action of restriction endonuclease *Eco RI*.
10. What is the exponential growth curve for a population?
11. Describe the process of termination of transcription in bacteria.
12. Haemophilia victims are rarely females. Why does it so happen?
13. Enumerate the steps involved in MOET.
14. How does spleen act as a lymphoid organ?

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**Or.** List the specific symptoms, causal agent and vector of Ascariasis.

15. Explain schematically the steps that occur which leads to immunodeficiency syndrome when a HIV attacks the victim.
16. How are soma-clones cultured from explants in *in vitro* conditions?
17. Comment: Anthropogenic actions hasten evolution.
18. What is a bio reactor? What is sparged stirred tank bioreactor?

### SECTION C

19. What are the steps involved in PCR? Draw a suitable diagram of the steps involved in PCR.
20. What is inbreeding depression? What are the advantages of out-crossing in cattle population?
21. Explain the action of ESP? Draw a labelled diagram of an ESP.

**Or.** How are flocs produced in secondary sewage treatment plant? Explain their significance.

22. Define a climax community. How does it differ from seral community?
23. 'A given species may occupy more than one trophic level in the same ecosystem at the same time.' Explain with an example.
24. Give a schematic representation of a lac operon and explain the function of each part of the operon.
25. Trace the development of ovum from an oogonium in a human female.
26. Explain the three basic types of interspecific interaction.
27. Explain the follicular phase of menstrual cycle? Why does not the menstrual blood clot?

### SECTION D

28. Shiva's father planned to buy an electric water heaters. Shiva insisted him to buy a solar water heater.
  - a. What are the values associated?



- b. Justify as to why Shiva insists his father to buy solar heaters.
- c. Suggest any three methods of harnessing solar energy.

29. Pen down the steps involved in separation and isolation of DNA fragments.

30. What is Hardy-Weinberg's rule? What are the factors that affect gene frequency of a population? In what way Nature selects the survival of the fittest.

## **HORIZON EDUCATIONAL CENTRE**

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