



ANANDALAYA  
PRACTICE TEST  
Class : XII

Subject: Biology  
Date : 28 /12/2019

M.M: 70  
Time: 3 Hours

General Instructions:

1. There are total of 27 questions and five sections in the question paper. All questions are compulsory.
2. Section A contains question numbers 1 to 5, multiple choice questions of one mark each. Section B contains question numbers 6 to 12, short answer type 1 questions of two marks each. Section C contains question numbers 13 to 21, short answer type II questions of 3 marks each. Section D contains question numbers 22 to 24, case based short answer type questions of 3 marks each. Section E contains question numbers 25 to 27, long answer type questions of five marks each.
3. There is no overall choice in the question paper. However, internal choices are provided in two questions of one mark, one question of two marks, two questions of three marks and all the five marks questions. An examinee is to attempt any one of the questions out of the two given in the question paper with the same question number.
4. Diagrams drawn should be neat and properly labelled.

SECTION A

1. Identify the correct sequency of events. (1)  
(a) Gametogenesis - syngamy - embryogenesis - zygote  
(b) Gametogenesis - embryogenesis - zygote - syngamy  
(c) Gemetogenesis - zygote - syngamy - embryogenesis  
(d) Gemetogenesis - syngamy - zygote - embryogenesis

OR

How many microspore mother cells are required to produce 1000 microspores/pollen grains?

- (a) 100 (b) 150 (c) 200 (d) 250
2. In a dihybrid cross, if you get 9:3:3:1 ratio it denotes that (1)  
(a) It is multiple allelism (b)The alleles of two genes are segregating  
(b) The alleles of the genes are interacting with independently  
each other (d) It shows co-dominance

OR

“Change in gene frequency of alleles results in evolution”.This statement is part of the proposition put forward by

- (a) Darwin’s theory (c) Lamarck’s Theory (b) Lamarck’s Theory  
(c)Hardy- Weinberg principle (d) de Vries Theory
3. The DNA fragments produced by the use of restriction endonucleases can be separated by (1)  
(a) Polymerase chain reaction (b) gel electrophoresis  
(c) paper chromatography (d) density gradient centrifugation
4. Methanogens, growing anaerobically on cellulosic material, produce (1)  
(a) Methane gas (b) Methane and Hydrogen  
(c) Methane and carbon dioxide (d) Methane, Carbon dioxide, Hydrogen
5. The thickness of Ozone is measures as (1)  
(a) Parts per million (c) Dobson unit  
(c) parts per billion (d) decibel

## SECTION B

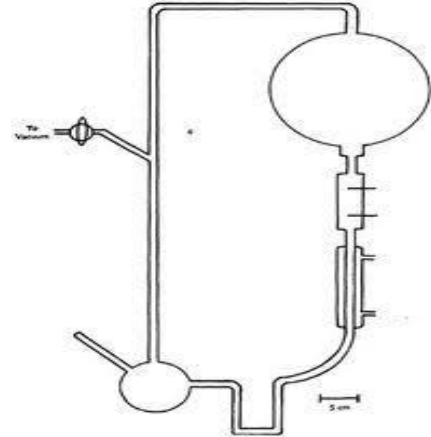
6. How is Bioinformatics adding new dimensions to Genetic Research? (2)

OR

What is point mutation? Explain with an example.

7. Which are the two essential roles played by Ribosomes during translation? (2)

8. Name the scientist who had used the set up shown below. (2)  
Write the purpose of 'a' in the set up and the conclusion the scientist arrived at.



9. Mention any four characteristic symptoms of Dengue fever. (2)

10. How is thermostable DNA polymerase obtained? State its role in genetic engineering. (2)

11. Differentiate between cross breeding and inter-specific hybridisation. (2)

12. 'The number of trophic levels in a food chain is limited'. Justify the statement. (2)

## SECTION C

13. (a) State the consequences, if the electrostatic precipitator of a thermal power plant fails to function. (3)

(b) Mention any four methods by which the vehicular air pollution can be controlled.

14. (a) What are the three kinds into which all the waste we generate can be categorised? How can they be disposed of? (3)

(b) Why are the polystyrene and plastic packaging used for protecting the food, considered as environmental menace?

OR

Why are sacred groves highly protected?

15. Explain how Eli-Lilly an American company produced Insulin by rDNA technology. (3)

16. Why is a recombinant protein called so? How can it be harvested on large scale? (3)

17. State the three characteristics of acquired immunity. List the different ways by which human can attain this. (3)

18. In MOET technology, how many mothers are required to produce a calf? Explain. (3)

19. Analyse the sex determining mechanism in grass hopper. What do you understand by female heterogamy? (3)

20. Excessive and continuous use of pesticides has resulted in evolution of some new species of pests. Analyse what reasons could have led to this. What is this type of evolution called? (3)

OR

How does Industrial Melanism support Darwin's theory of Natural Selection?

21. Do all gametes formed from a parent organism, have the same genetic composition (identical DNA copies of the parental genome)? (3)

#### SECTION-D

22. (a) Do you think that reproductive health in our country has improved in the past 50 years? If yes, mention some areas of improvement. (3)  
(b) What suggestion would you give to a childless couple who underwent infertility treatment for many years but failed to become parents? Why?
23. In some society women are often blamed for giving birth to female child. Analyse this situation leading to the correct and scientific explanation so that in the society women are no more blamed for the same. (3)
24. After a brief medical examination, a healthy couple came to know that both of them are unable to produce functional gametes and look for an 'ART'. Name the 'ART' and the procedure involved, that you suggest to them to help them bear a child. (3)

#### SECTION -E

25. Name the scientist who showed experimentally that it is DNA and not protein, the genetic material in bacteriophages. Describe the experiment and draw conclusion based on it. (5)

OR

- (a) What is trisomy? Give an example for the same from Human Genetics.  
(b) i. A cross is made between a Pea plant with axial, violet flowers (heterozygous for both the traits) and another bearing terminal, white flowers. Show the genotype and the phenotype of the progeny.  
ii What type of cross is this? What is its significance?

OR

26. (a) Name the two categories of microbes naturally occurring in sewage water. Explain their role in cleaning sewage water into usable water. (5)  
(b) Describe how biogas is generated from activated sludge. What are its components?

OR

- (a) Which pathogenic property of Baculoviruses is used as a Biocontrol agent?  
(b) A farmer approaches you to seek advice to improve the Nitrogen content of the soil to be used for cultivation of a non-leguminous crop. How will you explain the advantages of Biofertiliser to him, giving examples of the same?

27. (a) Differentiate between climax community and seral communities. (5)  
(b) Distinguish between productivity and decomposition.  
(c) Define standing crop.

OR

- (a) What are algal blooms? Mention the cause of them.  
(b) Mention their impact on ecosystem.  
(c) Write the scientific name of aquatic weed known as 'Terror of Bengal'.