

Tripura Board
Class XII
Biology
Sample Paper – 2

Time: 3 Hours 15 Mins**Total Marks: 70**

General Instructions:

- i) There are a total of 30 questions in four sections in the question paper. All questions are compulsory.
- ii) Section A contains questions number 1 to 8, very short answer type questions of 1 mark each.
- iii) Section B contains question number 9-18, short answer type I questions of 2 marks each.
- iv) Section C contains question number 19-27, short answer type II questions of 3 marks each.
- v) Section D contains questions number 28-30, long answer type questions of 5 marks each

Section A

- 1. Write the location and function of the Sertoli cells in humans. [1]
- 2. What is biopiracy? [1]
- 3. State the main function of bioreactors. [1]
- 4. Define pioneer community. [1]
- 5. Give two examples of decomposers. [1]
- 6. Name the three phases of gametogenesis. [1]
- 7. Why the rate of assimilation of energy at the herbivore level is called secondary productivity? [1]
- 8. A multinational company outside India tried to sell new varieties of turmeric without proper rights. What is such an act referred to? [1]

Section B

- 9.** What is parturition? Which hormones are involved in the induction of parturition? [2]
- 10.** Why the Drosophila male fly is called heterogametic? [2]
- 11.** If the base sequence of one strand of DNA is CAT, TAG, TAC, GAC, then what will be the base sequence [2]
(a) Of the complementary DNA strand
(b) Of its complementary RNA strand
- 12.** Explain the role of Ti plasmids in biotechnology. [2]
- 13.** Mention the importance of carbon cycle in nature. [2]
- Or**
- How do nuclear power plants upset ecological balance?
- 14.** How do long pollen grains retain their viability? [2]
- 15.** Draw a labelled diagram of the V.S. of apple. [2]
- 16.** Differentiate between Down's syndrome and Turner's syndrome. [2]
- 17.** In genetics, a reference is made to be an abbreviated expression 'AUG'. Write any three points of scientific information embodied in this combination of three letters. [2]
- 18.** State the theory of biogenesis. How does Miller's experiment support this theory? [2]

Section C

- 19.** List the various steps which are involved in plant genetic engineering. [3]
- 20.** Name and describe the technique which helps in separating the DNA fragments formed by using restriction endonuclease. [3]
- 21.** Write a short note on the adaptations of desert animals. [3]
- 22.** Explain the differences between the seral stage and the climax community during succession. [3]

Or

Describe various techniques used in the control of gaseous pollutants.

- 23.** Rahul always liked to visit a forest near his ancestral village. In addition to a variety of plants, it was inhabited by many birds and animals. He observed that each animal was living in particular sets of conditions. He enquired from his teacher the reason for this specificity. [3]
- (i) What is habitat?
(ii) What is the ecological importance of variations in habitats?
(iii) Give an example of habitat specificity.
(iv) Why did Rahul always like to visit the forest?
- 24.** Name the type of cells the AIDS virus first enters into after getting inside the human body. Explain the sequence of events that the virus undergoes within these cells to increase their progeny. [3]
- 25.** How does the human body maintain constant temperature both in summers and winters? Explain. [3]
- 26.** How are somaclones cultured from explants in *in vitro* conditions? Why are somaclones so called? [3]
- 27.** Briefly explain IVF and ET. What are the conditions in which these methods are advised? [3]

Section D

28.

- (a) When and where does spermatogenesis occur in a human male?
- (b) Draw a diagram of a mature human male gamete. Label the following parts: acrosome, nucleus, middle piece and tail
- (c) Mention the functions of acrosome and middle piece. [5]

Or

Describe briefly the characteristics of flowers pollinated by birds.

29.

- (a) Describe the various steps of Griffith's experiment which led to the conclusion of the 'Transforming Principle'.
- (b) How did the chemical nature of the 'Transforming Principle' get established? [5]

OR

Who proposed the chromosome theory of inheritance? Give the salient features of this theory.

30. Describe the asexual and sexual phases of the life cycle of *Plasmodium* which causes malaria in humans. [5]

OR

- (a) State the objective of animal breeding.
- (b) List the importance and limitations of inbreeding. How can the limitations be overcome?
- (c) Give an example of a new breed each of cattle and poultry.