

## **SAMPLE QUESTION PAPER 2**

**Class – XII**

**BIOLOGY**

**Time allowed: 3hrs**

**Maximum Marks: 70**

### **General Instructions:**

- (i) All questions are compulsory.
- (ii) This question paper consists of five Sections A, B, C, D and E. Section A contains 5 questions of one mark each, Section B is of 5 questions of two marks each, Section C is of 12 questions of three marks each. Section D is of 1 questions of four marks each and Section E is of 3 questions of five marks each.
- (iii) There is no overall choice. However, an internal choice has been provided in one question of 2 marks, one question of 3 marks and all the three questions of 5 marks weightage. A student has to attempt only one of the alternatives in such questions.
- (iv) Wherever necessary, the diagrams drawn should be neat and properly labelled.

### **Section A**

1. Is it syngamy or triple fusion that leads to formation of zygote in an angiosperm? Mention their ploidy. [1]
2. Write the scientific name of the plant used by Mendel for his experiments. [1]
3. Write the full form of SCID. [1]
4. Define BOD. [1]
5. What is anthropogenic pollution? [1]

### **Section B**

6. Black pepper seeds have both perisperm and endosperm. What is the difference between these two structures? [2]
7. Why is colour blindness trait more common with the males? Also explain conditions when a female will suffer from colour blindness trait. [2]
8. Name the microsporangia and megasporangia of an angiosperm. After fertilization what does megasporangia transform into? [2]
9. Write the antigens and antibodies present in the blood of persons belonging to A, B, AB and O blood groups? [2]
10. Describe photochemical smog in brief? How does it lead to snow blindness? [2]

Or

Describe the cause of algal blooms in a water body. What will be its effect on other organisms living in the same area?

### **Section C**

11. a) Why do scientists prefer to perform experiments with fruit flies and bacteria? [3]

- b) What is the need of pedigree analysis for human beings? [3]
12. a) What is ozone hole? Write the factors causing it. [3]
- b) What is good ozone and bad ozone?
13. Write the principle with diagram on which an electrostatic precipitator works. [3]

Or

Explain ways to manage the hospital and electronic wastes in your surroundings.

14. Describe spermatogenesis under the following heads (draw diagrams to support your answer): [3]

- a) formation of spermatocytes
- b) formation of immature sperms
- c) spermiogenesis and spermiation

15. If following is the sequence of the template strand of structural gene: CAATAGCCTAGAGAT then find out the following : [3]

- a) the sequence of mRNA formed after transcription along with its polarity.
- b) the sequence of bases on the coding strand of DNA.

16. a) On what grounds is CNG a better fuel than diesel and petrol? [3]
- b) Why should vehicles fitted with catalytic converter use only unleaded petrol?

Or

What is evil quartet? How has it become a threat for biodiversity?

17. What are palindromes? How are they significant to biotechnological processes? [3]
18. How are microbes useful to a sewage treatment plant? Explain. [3]
19. Through a single example explain the concepts of multiple allelism and co dominance. [3]
20. In the light of Darwin's evolutionary theory explain : [3]

- a) branching descent in Australian marsupials
- b) antibiotic resistance in bacteria

21. Discuss the various levels of biodiversity that are prevalent in the ecosystem. Give suitable examples to support your answer. [3]

22. What are cry genes and Cry proteins? Write scientific name of organism working as their source. How these proteins have benefitted the human beings? [3]

#### **Section D**

23. Scientists are developing new strategies for enhancement of food production. However is simply increasing the quantity of food a permanent solution for the growing population of India or something else also needs to be taken care of ? [4]

#### **Section E**

24. a) Where are corpus luteum and corpus albicans present? Do they have any specific function?
- b) Draw a well labeled diagram of mature graafian follicle.

c) Describe the endocrine functions of human placenta.

[5]

Or

a) Explain in detail all the events that occur during menstrual cycle.

b) What is menarche and menopause?

25. Describe the detailed structure of a eukaryotic chromosome with reference to packaging of DNA within that chromosome. How is the packaging different from a prokaryote? [5]

Or

Why is the genetic code a triplet? What are non sense codons in genetic code? Explain features of genetic code like degenerate, unambiguous, universal with suitable examples.

26. a) Define gene therapy. Site the example of ADA deficiency and its cure with reference to gene therapy.

b) Write the positive and negative effects of developing transgenic crops. or What are biopiracy and biopatenting? How are they interrelated? Give any example of biopiracy. How biopiracy can be harmful to the host country? [5]

