

CBSE -2004 CLASS XII BIOLOGY (Set-1)

General Instructions:

1. This question paper consists of four Sections A, B, C and D. Section A contains 5 questions of one mark each, Section B is of 10 questions of two marks each, Section C is of 10 questions of three marks each and Section D is of 3 questions of five marks each.
2. All questions are compulsory.
3. There is no overall choice. However, an internal choice has been provided in one question of 2 marks, one question of 3 marks and one question of 5 marks weightage. Attempt only one of the choices in such questions.
4. Question numbers 1 to 5 are to be answered in one word or one sentence each.
(v) Question numbers 6 to 15 are to be answered in approximately 20-30 words each.
5. Question numbers 16 to 25 are to be answered in approximately 30-50 words each.
6. Question numbers 26 to 28 are to be answered in approximately 80-20 wordy each.

SECTION - A

Q. 1. Name the condition in humans in which the blood cholesterol content becomes abnormally high. **1**

Q. 2. Define vernalisation. **1**

Q. 3. Many villagers near Industrial area suffer from "blue baby syndrome". How is this problem caused?

Q. 4. A cardiologist observed an elevated St segment in the ECG of a patient. What s it indicative of? **1**

Q. 5. Why is quarrantine a must before introduction of a plant species from a different country?

SECTION - B

Q. 6. What is meant by apoplast pathway? Why does it occur in cortex and not in endodermis? **2**

Q. 7. Where is pneumotoxie centre located in humans? What is its significance in breathing? **2**

- Q. 8.** How is a disease-resistant plant selected for successful breeding?
- Q. 9.** Why is the process of fertilisation in a flowering plant referred to as double fertilisation? Explain. **2**
- Q. 10.** Name the watery fluid secreted from Brunner's gland in the duodenum. Mention its any two characteristics. What role does it play inside the duodenum? **2**
- Q. 11.** How is opening and closing of stomata controlled? Explain. **2**
- Q. 12.** Why is the length of a food chain in an ecosystem generally limited to 3 - 4 trophic levels? Explain with an example. **2**
- Q. 13.** In what form do the terrestrial reptiles excrete their nitrogenous waste? How is this kind of excretion advantageous to the land vertebrates which lay shelled eggs? **2**
- Q. 14.** Explain briefly how computed tomography (CT) helps the doctors in pinpointing the defects in the patient's body. **2**
- Q. 15.** What is eutrophication? Explain with reference to aquatic ecosystem. **2**
Or
Name any two source organisms of agar. List any four areas in which agar has wide application.

SECTION - C

- Q. 16.** Name the two groups of nephrons on the basis of their position in the kidney. How are they different from each other? **3**
- Q. 17.** How is the halophyte Rhizophora adapted to survive in its habitat? Explain. **3**
- Q. 18.** When and why does photo-respiration take place in plants? How does this process result in a loss to the plant? **3**
- Q. 19.** Explain the sliding filament theory of muscle contraction.
- Q. 20.** What is special about "FlavrSavr" variety of tomato? Why is it preferred to its normal native variety? **3**
- Q. 21.** Draw a labelled sketch of L.S. of a human grinding tooth fixed in the socket. **3**
Or
Draw a schematic diagram to show the spinal reflex arc. Label the components of the pathway.
- Q. 22.** Name the organism involved in symbiotic nitrogen fixation. What are the components needed for this process? Explain their role. **3**

Q. 23. Differentiate between inbreeding and heterosis. The outcome of which one is superior in performance and why? **3**

Q. 24. What is the optimum percentage of forest area recommended by the national forest policy (1988) for the plains and the hills respectively? List any four problems caused due to deforestation. **3**

Q. 25. Why is the human placenta referred to as haemochorial type? Name the hormone it secretes to facilitate parturition. **3**

SECTION - D

Q. 26. Where does Calvin cycle take place in chloroplast? Explain the cycle.
Or

Where is electron transport system operative in mitochondria? Explain the system highlighting the role of oxygen. **5**

Q. 27. Describe the hormonal control of the reproductive system in human male. **5**

Q. 28. Define totipotency. Explain the two different routes of regenerating plantlets from callus culture. **5**