

BIOLOGY - 2004

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? **1**
- 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 quarantine a must before introduction of a plant species from a different country? **1**

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 pneumotoxic centre located in humans? What is its significance in breathing? **2**
- Q. 8.** How is a disease-resistant plant selected for successful breeding? **2**
- 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.** That 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

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loss' to the plant? **3**

Q. 19. Explain the s1M filament theory of muscle contraction.

Q. 20. What is special of "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 schernatic digram to show the spinal reflex are. Label the components of the pathway.

Q. 22. Name the organism involved in symbiotic nitrogen fixation. What are the components needed for this pure? 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**