



INDIAN SCHOOL SOHAR

Total no. of pages:4 +OTBA

STD XI

FINAL EXAMINATION

Time: 3½Hrs

1-03-15

BIOLOGY (THEORY)

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 10 questions of three marks each, Section D is of 3 questions of five marks each and Section E is of 2 questions of 5 marks each (OTBA).

iii) There is no overall choice. However, an internal choice has been provided in one question of two marks, one question of 3 marks and all questions of 5 marks each. A student should attempt only one of the alternatives in such questions.

iv) Wherever necessary, the diagram drawn should be neat and properly labeled.

SECTION A

1. Iodine is added to food samples, to test for the presence of starch. If starch is present, the sample solution turns blue black in colour. Why? (1)
2. Mention the functions of the following cell junctions: (1)
 - a) Tight junctions Adhering junctions
3. State the meaning of 'Omnis cellula-e cellula'. (1)
4. Represent the relationship between water potential, solute potential and pressure potential. (1)
5. Spleen is known as 'graveyard' of RBC. Why? (1)

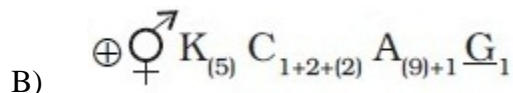
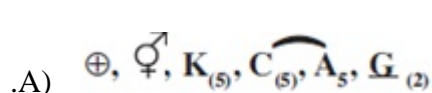
SECTION B

6. Name any two hormones secreted by adrenal cortex and mention one function of each. (2)

OR

If Hydrochloric acid is not produced in our stomach, how it will affect the digestion of food?

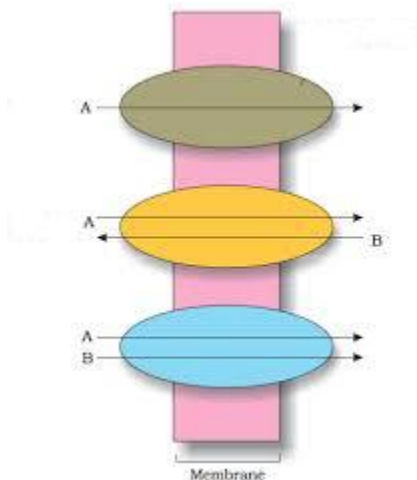
7. Identify the family from the following floral diagrams. What type of aestivation is found in corolla of these families? (2)



8. Mention the significance of photoperiodism and vernalisation. (2)
9. How are plastids classified? (2)
10. Tabulate the differences between parenchyma and sclerenchyma in the structure of cell wall and location. (2)

SECTION C

11. Nodule formation involves a sequence of multiple interactions between Rhizobium and roots of the leguminous plants. Explain the stages of nodule formation in Soya Bean. (3)
12. The figure given below depicts the movement of molecules across a cell membrane. Name the type of movements and explain. (3)

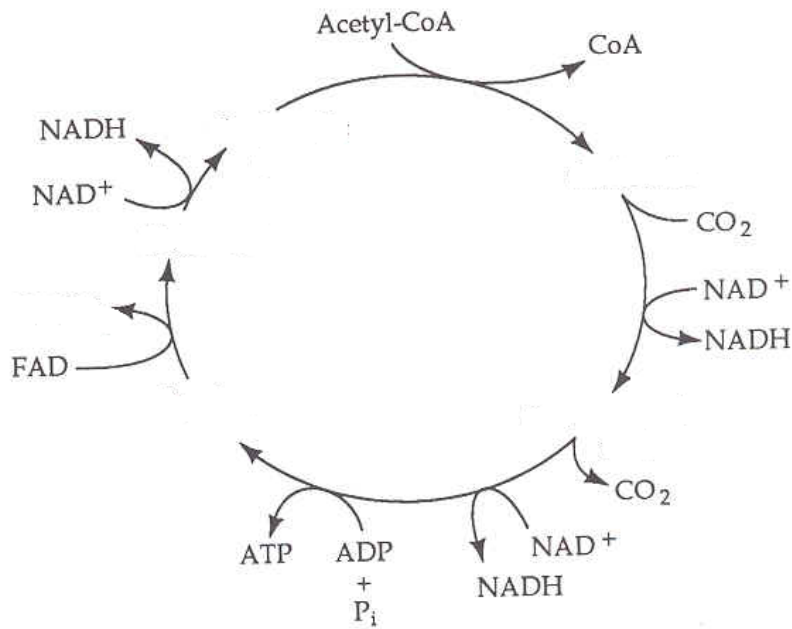


13. Draw a neat diagram to show the structure of a nephron and label the following parts: (3)
- a) Bowman's capsule b) Glomerulus c) Henle's loop

OR

Draw a neat diagram to represent a standard ECG and label the different waves. What does the wave P, QRS, and T represent?

14. Mention the type of modification found in the following and state one function each: (3)
- a) pneumatophore in Rhizophora. b) Colocasia c) Thorns in Citrus
15. Name the elements of xylem and mention the functions of them. (3)
16. Explain the structure of plasma membrane as proposed by Singer and Nicolson. (3)
17. List the events occurring during the three phases of interphase of the cell cycle in animal cells. (3)
18. The steps in catalytic cycle of an enzyme action are shown below. Describe the steps. (3)
- $$E + S \longrightarrow ES \longrightarrow EP \longrightarrow E + P$$
19. Fill in the blanks A,B, C ,D, E & F given in the flow chart which represent the TCA cycle. (3)



20. a) In chloroplast, where are the chlorophyll pigments present?

b) There is a clear division of labour within the chloroplast. Justify the statement.

(3)

SECTION D

21. With the help of a flow chart explain the biosynthetic pathway common to all photosynthetic plants.

(5)

OR

Light harvesting complexes within the photosystem I and photosystem II are involved in photochemical phase of photosynthesis. Explain how these systems help in light reaction.

22. Describe how a nerve impulse is generated and conducted through an axon.

(5)

OR

a) Describe how expiration and inspiration take place in human beings?

b) Mention the role of conducting system in maintaining rhythmic contractile activity of the heart.

23. Hypothalamus and JGA plays a major role in monitoring and regulating kidney functions. How is GFR maintained by them? Explain.

(5)

OR

a) Discuss the main steps in the digestion of proteins as the food passes through different parts of the alimentary canal.

b) How are ribs classified?

SECTION E (OTBA)

24. Humans damage the environment but in turn get affected too. Eventually we try to control the damage to save ourselves. Give an example of such a situation. (5)

25. Would an ecosystem be less functional, if instead of 10,000, we have only 5,000 species of frogs on earth? Explain. (5)

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