

Time: 2 hrs.

General instructions

1. Question paper has 3 sections. There are 13 questions.
2. Section A has 6 short answer type questions of 2 marks each.
3. Section-B has 6 questions of 3 marks each.
4. Section C has one case based question of 5 marks .
5. Draw well labelled diagrams wherever necessary.

SECTION: A

1. How is nerve impulse generated along a neuron? 2

OR

Name the region in a human brain that regulates :

- a) Body temperature b) Cardiovascular reflex c) Balance d) Learning 2
2. Why is there no photo respiration in C4 plants ?
3. During which stage of meiosis do the following occur: Formation of synaptonemal complex and recombination nodules, crossing over and chiasmata formation. 2
4. Calculate the number of ATP produced during different steps of Respiration. 2
5. Name the substances are reabsorbd in the PCT and the descending limb of the nephron? 2
6. Name a glucocorticoid. Write its function 2

SECTION: B

7. Draw diagram to show the internal structure of Heart and label the parts : i) which pumps oxygenated blood to all parts of the body. ii) which carries deoxygenated blood to all body parts 3
8. Name a stress hormone in plants. Write its function. Why is it called so? 3
9. Distinguish between anaphase of Mitosis and anaphase 1 of meiosis with the help of labeled diagrams. 3
10. Explain the mechanism of muscle contraction with the help of diagrams. 3
11. Make a flowchart to depict glycolysis. Where does it occur? 3

OR

- Why is respiration called an amphibolic pathway? Explain. 3
12. Write the steps in the mechanism of breathing.

SECTION: C

13. Read the following passage and answer the questions
- Amit and Sumit are good friends. Amit's father had an injury and needed blood transfusion. His blood group is B. Sumit arranged blood of a group suitable for Amit's father.
- a. Name the blood groups that will be suitable for transfusion to Amit's father.
 - b. Name the antigen and antibody that would be found in the blood of Amit's father.
 - c. Why are persons with blood group O known as universal donors?
 - d. Blood of which group can be donated only to people with blood group AB? Why? 5