



School of Biological Sciences  
Doon University  
Dehradun, Uttarakhand  
Question Paper: End-Semester Examination  
Session: Aug 2023 – Dec 2023

**B.Sc. Biological Sciences with Research (Third Semester)**

**Course: System Physiology**

**Course Code: BSC203**

**Total Marks: 50**

**Maximum Time: 2:00 Hrs**

**PART I: Give answers to any five questions:**

**(Marks:  $2 \times 5 = 10$ )**

1. Rigor mortis is a post-mortem change resulting in the stiffening of the body muscles due to chemical changes in their myofibrils. What is that chemical change?
2. What do you mean by transpiration pull?
3. What is the role of RAAS in the regulation of kidney function?
4. What is sarcomere? Draw its diagram.
5. What is a synapse?
6. Name the hormones secreted under following conditions:  
(a). Fight/flight (b). Rest/digest?

**PART II: Give answers to any four questions:**

**(Marks:  $5 \times 4 = 20$ )**

7. Explain the pressure flow mechanism of Phloem transport.
8. Explain the structure and function of a voluntary muscle.
9. Illustrate with the help of diagrams and explain why stomata opens during day time and closes during night?
10. Explain the counter current mechanism in detail.
11. Write a short note on glial cells.

**PART III: Give answers to two questions:**

**(Marks:  $10 \times 2 = 20$ )**

1. Name and explain the functions of all the hormones released from adrenal glands. Also discuss how they regulate stress in our body?
2. Discuss the role of parietal cells in gastric acid-base balance through the secretion of various activator and inhibitor molecules.
3. What are neurons? Draw a well labeled diagram of a neuron. Classify them based on their structure and function.