

**Unique Paper Code** : 42234301  
**Name of the Paper** : Physiology and Biochemistry  
**Name of Course** : B.Sc. (Prog.) Life Sciences Zoology Examination, 2020-LOCF  
**Semester** : III  
**Duration** : 3 hours  
**Maximum Marks** : 75

**Instructions for candidates:**

- 1. Write your Roll No., Unique Paper Code, Name of the paper, Course, Semester, and Date of examination on the first page of answer sheet.*
- 2. Attempt ANY FOUR questions. All questions carry equal marks.*
- 3. Draw neat, labeled diagrams wherever required.*

1. Define resting membrane potential. How resting membrane potential is maintained in neuron? Briefly explain the arrangement of filaments within a sarcomere with the help of a well labelled diagram. 18.75
2. Describe various lung volumes and capacities in details with spirogram. Name the various regions of small intestine and discuss their role in digestion. 18.75
3. Draw a neat and well labelled diagram of nephron. What is juxtaglomerular apparatus? Discuss the mechanism of urine formation. 18.75
4. Give a detailed account of activation of fatty acid and beta-oxidation of Palmitic acid. Discuss briefly the bioenergetics of the process. 18.75
5. Define glycogenesis. Discuss the glycolysis pathway and its regulation. 18.75
6. Describe the Electron Transport Chain and basics of Chemiosmotic theory for ATP synthesis. 18.75