2. (a) Describe the ultrastructure of skeletal muscle.

   (b) Discuss the hormonal control of spermatogenesis. (6+6)

3. Explain the different phases of Cardiac cycle. Briefly discuss the respiratory volumes and capacities of Human lungs. (8+4)

3. Give a detailed account of the pathway of Tricarboxylic acid cycle. How many ATPs are produced per cycle? (12)

4. Describe the steps of urea cycle. Briefly explain the classification of enzymes. (9+3)

5. Short Notes (**Any three**) : (4+4+4)

   (i) Proton motive force

   (ii) Michaelis Menten equation

   (iii) Graded potential

   (iv) Absorption of Lipids

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[This question paper contains 4 printed pages.]

26 DEC 2022

Your Roll No. .....

Sr. No. of Question Paper : 1710

Unique Paper Code : 42234301

Name of the Paper : Physiology and Biochemistry

Name of the Course : **B.Sc. (Prog.) Life Science, Zoology Examination, LOCF**

Semester : III

Duration : 3 Hours Maximum Marks : 75

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Draw neat, well labeled diagrams, wherever required.
3. Attempt **Five** questions in all.
4. Question No. **1** is compulsory

1. (a) Define (**any four**) : (4)

   (i) Ketosis

   (ii) Cytochromes

   (iii) Cardiac Impulse

   (iv) Peristalsis

   (v) Ribose

(b) Differentiate between the following **(any five)** : (5)

(i) Insulin and Glucagon

(ii) Saturated Fatty acid and Unsaturated Fatty acid

(iii) Myelinated and Non-myelinated axons

(iv) Essential and non-essential amino acids

(v) Ureotelic and uricotelic organisms

(vi) Bone and cartilage

(c) Draw the structures of the following **(any four)** : (8)

(i) Glyceraldehyde 3 phosphate

(ii) Lactate

(iii) Multipolar neuron

(iv) Human Egg Cell

(v) Urea

(d) Write the importance of the following **(any five)** : (5)

(i) UDP-Glucose

(ii) Counter current Mechanism

(iii) Ovulation

(iv) ATP synthase

(v) Gluconeogenesis

(vi) Chemical synapses

(e) Expand the following **(any five)** : (5)

(i) GTP

(ii) RAAS

(iii) UDPGLc

(iv) ACTH

(v) MALT

(vi) FADH2