Mode of Examination: Online

S.No of question paper :

Unique Paper Code : 32231202_OC

Name of the Paper : Cell Biology

Name of the Course : **B.Sc. (Hons.) Zoology (CBCS)**

Semester : II

Duration : 2 Hours

Maximum Marks : 75

Instructions for candidates:

1. Write your Roll No., 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.

Q 1. Describe the fluid mosaic model of the cell membrane with suitable diagram and explain the various types of transport mechanisms across the membrane.

Q 2. Describe the process of Meiosis and illustrate its significance.

Q 3. Give detailed account of the extrinsic and intrinsic pathways of Apoptosis and explain how it differs from Necrosis.

Q 4. Give a detailed account of the cell cycle regulation and importance of the check points in it.

Q 5. Discuss the structure and function of Nuclear Pore Complexes (NPC) and give a brief account on packaging of chromosomal DNA in eukaryotes.

Q 6. Describe in details the mechanism of Oxidative Phosphorylation along with Chemi-osmotic hypothesis.

Online Mode

Unique Paper Code : 32231403

Name of the Paper : Biochemistry of Metabolic Processes

Name of the Course : B.Sc. (Hons.) Zoology

Semester : IV, CBCS

Duration : 2 Hours

Maximum Marks : 75

Instructions for candidates:

1. Write your Roll No. on the top immediately
2. Attempt **FOUR** questions in all. Each question carries 18.75 marks.

Q1.Tissues actively involved in lipogenesis also have active pentose phosphate pathway. Why should there be a correlation between the two pathways. Explain the steps involved in *de novo* production of fatty acids.

Q2. How many molecules of ATP would be produced by glycolysis and TCA cycle, if Fructose 1, 6 bisphosphate is the precursor? Explain the process diagrammatically.

Q3. Discuss chemiosmotic theory of oxidative phosphorylation in detail. How is inner mitochondrial membrane important for this process?

Q4. Why is the formation of Glutamine and Glutamate essential, prior to biosynthesis of Urea. Describe the process in detail.

Q5. What are ketone bodies and name a metabolic disease where these are overproduced. Elaborate the process of ketone body formation.

Q6. Discuss shuttle systems and their importance. Also add a note on inhibitors and uncouplers of electron transport chain.

Mode of Examination: OBE

Unique Paper Code	: **32237906**
Name of the Paper	: Parasitology
Name of the Course	: B.Sc. (H) Zoology
Semester	: VI
Duration	: 2 h
Maximum Marks	: 75

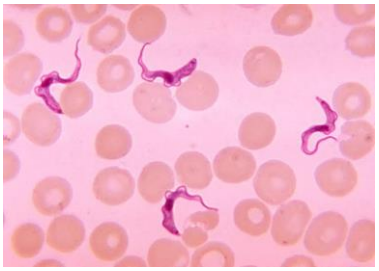
Instruction for Students

Write your Roll No., Name of the paper, Course, Semester, and Date of examination on the first page of answer sheet.

Attempt **ANY FOUR** questions. All questions carry equal marks.

SET - B

1. Identify the spindle-shaped structures shown in the figure below. Discuss their importance and mode of transmission in human beings. Add a note on its various forms and prophylactic measures.



2. Name the only digenetic trematode which does not produce rediae. Illustrate the life cycle of parasite with the help of a well labelled diagram. Briefly describe its pathogenicity and prophylaxis.

3. Which zoonotic disease is considered dead-end of the parasite in human beings? How does the parasite multiply for the continuation of its species? Write the prophylactic measures which can be adopted to prevent infection.

4. Enlist the bacterial diseases transmitted by insect vectors. How do these symptoms express themselves in the human body? Can we take some measures to prevent them? Discuss.

5. Name any **two** diseases which can be transmitted only during night in India. Write their pathogens and vectors, if any. Briefly discuss the life cycle of **any one** of these causative agents and methods of prevention.

6. The larval cysts of a digenetic parasite if accidentally infect brain, can cause severe headaches and epileptic seizures due to swelling and oedema in brain tissues. How are these cysts formed and reach the brain? Explain with the help of its detailed life cycle and the pathogenicity caused.