**2023**
**B.A./B.Sc.**
**Second Semester**
CORE – 4
**ZOOLOGY**
*Course Code: ZOC 2.21*
(Cell Biology)

*Total Mark: 70* *Pass Mark: 28*
*Time: 3 hours*

*Answer* five *questions, taking* one *from each unit.*

## UNIT–I

1. Explain in detail with diagrams two models of plasma membrane structure. 7+7=14

2. Distinguish between prokaryotic and eukaryotic cells. Explain the three types of cell junction of cell membrane and state its function. 2+12=14

## UNIT–II

3. Describe the morphology, types, and function of Golgi bodies with a labelled diagram. 7+4+3=14

4. What is lysosomes? Name the enzymes of lysosomes and state their functions. Explain polymorphism in lysosome. 2+4+8=14

## UNIT–III

5. What is the respiratory chain of mitochondria in a cell? State the basic function of mitochondrial respiratory chain. Elaborate with diagram on the mitochondrial respiratory chain. 2+2+10=14

6. Write short notes on the following: 7×2=14
   (a) Cytoskeleton
   (b) Structure of microtubules

## UNIT–IV

7. Illustrate the following structures: 7×2=14
   (a) Nucleus
   (b) Lampbrush chromosome

8. What is chromosome? Explain the different levels of packaging in chromosomes. Briefly describe the types of chromosomes on the basis of the location of centromere. 2+6+6=14

## UNIT–V

9. Define mitosis. State the differences between mitosis and meiosis. Explain the different stages of mitosis with diagrams. 2+4+8=14

10. Explain the types and functions of checkpoints in a cell cycle with a labelled diagram. What is GPCR and its role in regulating cellular homeostasis? 7+2+5=14