PART-I
ZOOLOGY HONOURS
PAPER I UNIT I
(Units should be answered separately, make one pdf)
FULL MARKS-50
TIME-2HRS

1. Answer any **five** questions 2x5
   a) Write the scientific name of apple snail. To which class does it belong?
   b) Define metamerism.
   c) How many book lungs are there in scorpion? State their locations.
   d) What is the difference between connective and commissuer?
   e) Name the muscles taking part in biting mechanism of snake.
   f) State the importance of notochord in *Branchiostoma.*
   g) What is mesonephric kidney?
   h) What is the difference between ductus caroticus and ductus botalli?

GROUP A

Answer any two

2. a) Why is *Paramaecium* known as a heterokinetic animal? Give an account of ciliary movement in *Paramaecium* sp. b) Discuss the role of microfibrils in amoeboid movement. 1+4+ 5

3. a) Describe the structure of a typical gill of prawn. Add a note on the mechanism of respiration in prawn. b) Write the difference between book-gills and book-lungs with examples. 4+3+3

4. a) Draw and describe the nervous system of a gastropod studied by you. 2+5
   b) State the importance of torsion in *Pila* sp. 3

5. Write short notes on any two
   a) Respiratory pigment in Arthropod
   b) Conservation of coral reefs
   c) Polymorphism
   d) Canal system in sponges

GROUP B

Answer any two

6. Place the following animals in their respective classes with reasons (2.5x4)
   Catla, Bufo sp., Scoliodon sp., Ornithorhynchus sp.
7. Mention four differences between poisonous and nonpoisonous snakes with Indian examples. What is the difference between lizards and snakes? 6+4
8. Draw a labelled diagram of a feather. What is the difference between ratites and carinates? 6+4
9. Write short notes on **any two**- 5X2
   a) Exoskeletal structure of mammals
   b) Ruminant stomach of cow
   c) Basic body plan in chordates
   d) Paedomorphosis in Axolotl larva

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PART-I
ZOOLOGY HONOURS
PAPER I UNIT II
FULL MARKS-50
TIME-2HRS

1. Answer any **five** questions 2x5
   a) What are lampbrush chromosomes?
   b) What is the difference between euploidy and aneuploidy?
   c) What is mutation?
   d) What is barrbody? A **44XXXY** person will have how many barrbodies?
   e) What are desmosomes?
   f) Define linkage with example.
   g) Mention Chargaff rule.
   h) State the function of repressors.

GROUP A
Answer any one

2. a) What is resolution of a microscope?
   b) State the difference between SEM and TEM.
   c) What is the function of objective of a light microscope? 2+6+2
3. a) Describe the fluid mosaic model of plasma membrane.
   b) What is selective permeability? What is the function of liposome? 5+3+2
4. a) Write a note on mitochondrial biogenesis.
   b) What is the difference between N-linked and O-linked glycosylation? 5+5

GROUP B
Answer any three

5. a) State the functions of DNA. 3
   b) As per Bridge's genic balance theory of ex determination in *Drosophila*, what is the expected sex of the individual with the following chromosome constitution: i) 4X4A ii) 2X3A iii) 1X3A iv) 1X2A. 4
   c) Mention the role of SRY in human sex determination. 3
6. a) Distinguish between polytene puff and lampbrush loop. 4
   b) Draw and describe the structure of nucleosome. 2+4
7. a) What do you mean by linkage group? How many linkage groups are there in humans and *Drosophila* and why? 2+4
   b) What is tetrad stage? What is its significance? 2+2
8. a) What is cytoplasmic inheritance?
   b) What is the role of X and Y chromosomes in the sex determination of humans?
   c) What is TDF? Where is it found? 4+4+1+1
9. Write short notes on **any four:** 2 ½ X 4
   a) Prokaryotic Transcription
   b) Replication is semiconservative
   c) Linkage experiment of Brodges
   d) Nullisomy and monosomy
   e) Allele concept with reference to ABO blood group
   f) Mutation

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