

ZOOLOGY

PAPER – I

GROUP A : Non chordata and Chordata :

1. General survey and classification of animal Kingdom.
2. Study of the structure, bionomics and life history of paramaecium. Euglena, Plasmodium, Giardia and Entamoeba.
3. Anatomical structure, reproduction and canal system of sycon.
4. Structure and life history of Obelia. Polymorphism in coelenterata.
5. Structure and life history of planaria, liver fluke, Ankylostoma, Paasitic adaptations of helminthes.
6. External morphology, anatomical structure and their functions of nereis and leech.
7. External morphology, anatomical structure and their function of prawn, scorpion and Grasshopper, social life of Ants and Honey Bees.
8. External morphology, anotomical structure and their functions of pila and unio, elementary knowledge of pearl formation.
9. Anatomical structure and their function of starfish, Larel, formes of Echinodermata.
10. General organisation and classification of Protochordata, Anatomical structure and their functions of Amphioxus. Affinities of Amphioxus, Retrogressive metamorphosis of ascidia.
11. General organisation of cyclostomata.
12. Anatomical structures and their functions of scoliotan. Affinities of Diphoi.
13. Structure and functions of sense organs of Toad, Portal system and respiration in Toad.
14. Anatomical structures and function of Calotes poisonous and non-poisonous snakes, poison apparatus and biting machinism of snake. Fossil reptiles.
15. Anatomical structures and their functions of Pigeon. Flightless birds, Flying and perching mechanism in birds. Migration of birds. Volant adaptation of birds.
16. Anatomical structure and their function of Rat. Dentation in mammals. Structural Peculiarities and affinities of marsupials and prototherians.

GROUP B

1. Abiotic factors and their role.
2. Biotic factors, inter and intraspecific relations.
3. Concept, components of ecosystem, Food chain Ecological pyramids.
4. Adoption of life in relation of fresh water, merine water and desert.
5. Pollution in air water and land.
6. Wildlife of India with special reference to North East of India.
7. Kaziranga National Park.
8. Concept of Mean, Media and Mode.
9. Standard deviation and standard error.
10. Correlation and regression and chi square and t test.
11. Comparitive study of heart in vertebrate studies.
12. Succession of kidneys-Pro, meso and meta nephros in vertibrates.
13. Pectoral and pelvic girdles of tetrapods.
14. Morphology, life history and culture of lac insect.
15. Morphology, life history and culture of Eri and Muga Silk worm.
16. Pisciculture and induced breeding.
17. Morphology and life history of honey bee.

ZOOLOGY

PAPER-II

**Cell Biology : Evaluation : Taxonomy :
Physiology : Embryology : Zoo Geography :**

GROUP A : Cell Biology : Genetics Evolution

1. Structure and function of cell.
2. Protoplasm - its physical and chemical properties.
3. Structure and function of cell membrane, nucleus mitochondria golgi bodies and ribosomes.
4. Cell division - Mitosis and Meiosis, Theories of cell division.
5. Nucleic acid and biosynthesis of protein.
6. Mendelian Laws of inheritance.
7. Linkage and crossing over. Linkage maps.
8. Multiple alleles.
9. Chromosomal sex determination.
10. Gene structure and modern concept of gene.
11. Mutation - spontaneous and induced.
12. Cytoplasmic inheritance.
13. Sex-linked inheritance.
14. Evidence of evolution- Anatomical, Embryological and palaeontological.
15. Theories of evolution- Lamarckism, Darwinism and De Vries theory of mutation.
16. Neo- Darwinism.
17. Fossil and fossil dating
18. Adaptive radiation in mammals.

GROUP B : Physiology : Embryology : Zoo Geography :

1. Composition of food proteins, Carbohydrate and lipids.
2. Different types of enzymes with their function.
3. Physiology of digestion respiration and excretion in mammals.
4. Absorption of digested food.
5. Composition of blood, blood groups in men coagulation of blood.
6. Structure and physiology of pituitary, thyroid and pancreas.
7. Gametogenesis.
8. Fertilization.
9. Types of Eggs and cleavage pattern.
10. Development upto formation of their germinal layers in frog and chick.
11. Foetal membranes in chick and mammals.
12. Types of placenta and function of placenta.
13. Concept of species and sub species.
14. Principles of classification. Zoological nomenclature and international code.
15. Zoo geographical realms of the world.
16. Discontinuous distribution of vertebrates.
17. **Dispersal - Agencies of dispersal and its significance.**