ZOOLOGY (HONOURS)

Paper III

Time - 3 hours **Full Marks - 75**

Ten questions are to be set. Question number 1 will be compulsory and objective (numbering fifteen, each of one mark) covering the whole syllabus. Students will be required to answer any five questions in all, including question number one.

Group A

1. Origin and general characters of Chordates.
2. Structure, life cycle of *Herdmania*.
   - Retrogressive metamorphosis
3. Salient features and affinities of Cyclostome.
4. **Fishes** -
   - classification upto orders.
   - Scales in fishes.
   - Respiration in fishes - with accessory respiratory organs.
   - Comparison of Cartilaginous & Bony fishes with reference to *Scoliodon* & *Labeo*.
   - General Account of Dipnoi.
5. **Amphibia** -
   - Origin & evolution.
   - Classification upto orders.
   - Neoteny
6. **Reptiles** -
   - Classification upto orders.
   - Biting & Feeding mechanism in snakes.
   - Structure & affinities of Sphenodon.
7. **Birds** -
   - Origin of Birds.
   - Concept of Ratitae & Carinatae.
   - Respiration in birds.
   - Flight adaptation in birds
8. **Mammals** -
   - General account of Prototheria and Metatheria.
   - General account of Primates.

Group B

Comparative Anatomy of Vertebrates with special reference to :

1. - Integument
2. - Gastro-intestinal tract
3. - Heart
4. - Aortic arches
5. - Brain
6. - Evolution of kidney, Urinogential system
7. - Reproductive organs & gonads

ZOOLOGY (HONOURS)

Paper IV

Time - 3 hours **Full Marks - 75**

Ten questions are to be set. Question number 1 will be compulsory and objective (numbering fifteen, each of one mark) covering the whole syllabus. Students will be required to answer any five questions in all, including question number one.

Group A

1. Digestion & absorption of dietary components
   Natural aspects, Vitamins related disorders
2. **Respiration** -
   - Mechanism and control of breathing
   - Aerodynamics of lungs
   - Transport of gases
3. **Blood** -
   - Composition and function of blood & lymph
   - Blood groups
   - Mechanism of blood clotting
   - Structure of haemoglobin & types
4. **Heart** -
   - Structural/Functional aspects of human heart
   - Conduction, cardiac cycle, heart rate & cardiac index, ECG & defects
5. **Structural/ Functional aspects of mammalian kidney**
   - Physiology of urine formation in mammal
   - Osmoregulation in fishes and mammals

6. **Glycogenesis**

Group B

Vertebrate Endocrinology and Reproductive Physiology

1. Classification of hormones
2. Mechanism of hormone action
3. Structure and mechanism of action and function of insulin
4. Biosynthesis of hormones of - Thyroid, Adrenal, Ovary & Testis
5. Reproductive cycle in Vertebrates
6. Hormonal regulation of gametogenesis in male and female
7. Endocrine disorders.
8. Changes in maternal physiology during pregnancy

ZOOLOGY (HONOURS)

Practical

Time - 6 hours **Full Marks -50**

(Expt.- 30, viva-12, NB- 8)

1. **Dissection** 1×10= 10 marks
   (i) Scoliodon and Bony fish - Afferent and Efferent blood vessel cranial nerves, Internal ear, Accessory respiratory organ of *Heteropneustis* fossilis.
2. **Mounting** :- Ampulla of Lorenzini, Scales of fishes, vaginal smear of rat to study estrous cycle. 1×5 = 5 marks
3. **Physiology** - 1×5 = 5 marks
   i. Haemoglobin
   ii. Blood cells count
   iii. Determination of Bleeding and clotting time
   iv. Recording of heart beat
4. **Spotting** 10×2= 20 marks
   i. Museum specimens 2
   ii. Slides - Histolgy & Embryology 4
   iii. Bones - Limbs of frog 1
   Girdles of Varanus 1
   Skull of Fowl 1
   Vertebrae of Rabbit 1
5. **Records and field collection** 5 marks
6. **Viva-voce** 5 marks