

SYLLABUS, TDC-III
RAMESHWAR MAHAVIDYALAYA, B. R. A. B. U, MUZAFFARPUR
ZOOLOGY (HONOURS) PAPER-V

Time: 3 Hours

Full Marks: 100

Group-A

Objective type questions (1x15) with alternative short answer requiring questions (3x5)

Group-B

Biochemistry:

1. Structure and classification of protein, carbohydrates and fats
2. Structure and classification of Amino acids
3. Metabolism of carbohydrates- Glycolysis and Krebs cycle
4. Vitamins- Definition, types and function

Group-C

Physiology:

1. Physiology of digestion
2. Physiology of respiration (Ventilation of lungs and transport of gases)
3. Physiology of excretion and osmoregulation
4. Physiology of blood coagulation
5. Physiology of testicular and ovarian cycle

Group-D

Endocrinology (Mammals)

1. Physiology of various endocrine glands- Pituitary, Thyroid, Adrenal, Islet of Langerhans and Gonads
2. Chemical nature and physiological action of the hormones of the following endocrine glands
 - (a) Pituitary- adenohypophysis and Neurohypophysis
 - (b) Thyroid
 - (c) Adrenal cortex and medulla
 - (d) Islet of Langerhans
 - (e) Gonads-ovary and testis

Books:

1. Dr KV Sastry, Animal Physiology and Biochemistry (Rastogi Pub)
2. CB Power, Biochemistry (Himalaya Pub)
3. RA Agarwal, Animal Physiology and Biochemistry (S Chand)
4. Dr KV Sastry, Endocrinology and Reproductive Biology (Rastogi Pub)

ZOOLOGY (HONOURS) PAPER-VI

Time: 3 Hours

Full Marks: 100

Group-A

Objective type questions (1x15) with alternative short answer requiring questions (3x5)

Group-B

Cell biology:

1. Ultra-structure and function of the following cell organelles:
Plasma membrane, Endoplasmic reticulum, Mitochondria, Golgi complex, Ribosome, Chromosomes, Lysosome, Nucleolus.
2. Gametogenesis-Spermatogenesis and oogenesis

Group-C

Genetics:

1. Linkage and crossing over
2. Structure and replication of DNA, transcription and translation
3. Chromosomal aberration-genetic and cytological manifestations and significance
4. Gene mutation and molecular mechanism of its origin.
5. Extra-nuclear genetic system

Group-D

Economic Zoology:

1. Lac culture
2. Sericulture
3. Apiculture
4. Pisciculture
5. Elementary idea of the common pests of paddy, wheat, sugarcane and their control
6. Vectors of Kala-Azar, Malaria and Filariasis- their biology, mode of infection, prevention and control

Books:

1. Bhamrah, Genetics and Evolution, (Anmol Pub)
2. PK Gupta, Cytology, Genetics and Evolution (Rastogi Pub)
3. Dr GS Shukla, Economic Zoology, (Rastogi Pub)
4. PK Gupta, Cell and Molecular Biology, (Rastogi Pub)
5. Dr SP Singh, Cell Biology, (Rastogi Pub)
6. PK Gupta, Genetics, (Rastogi Pub)

ZOOLOGY (HONOURS) PAPER-VII

Time: 3 Hours

Full Marks: 100

Group-A

Objective type questions (1x15) with alternative short answer requiring questions (3x5)

Group-B

- (i) Sources of hereditary variation and their role in evolution
- (ii) Principle of evolution: Lamarkism, Neo Lamarkism, Darwinism and Neo Darwinism
- (iii) Isolation mechanism and their role in evolution
- (iv) Hardy-Weinberg Law and genetic equilibrium
- (v) Fossil history of horses and Man

Group-C

Zoogeography and Paleozoology:

- (i) Zoogeographical realms of the world- their boundaries and climatic peculiarities
- (ii) Characteristic and peculiar fauna of oriental, Ethiopian, Australian regions
- (iii) Characteristics of Island fauna
- (iv) Theories and principles pertaining to animal distribution
- (v) Different geological eras of the world, their duration and climatic conditions
- (vi) Faunistic peculiarities of Palaeozoic, Mesozoic and Cenozoic eras
- (vii) Fossils, their mode of formation and age determination.

Group-D

Histology (Mammal):

Integument, Epithelial, Connective and Skeletal tissues, stomach, intestine, liver, spleen and kidney.

Books:

1. PK Gupta, Genetics, (Rastogi Pub)
2. Bhamrah, Genetics and Evolution, (Anmol Pub)
3. HS Bhamrah, Organic Evolution, (Anmol Pub)
4. AN Jagannatha Rao, Wildlife, (TT Maps Pub)

ZOOLOGY (HONOURS) PAPER-VIII (PRACTICALS)

Time: 6 Hours

Full Marks: 100

Biochemistry (20 Marks)

- (i) Benedict's test for sugar
- (ii) Molish's test
- (iii) Iodine test for starch and glycogen
- (iv) Ninhydrin reaction for glycine/tyrosine/tryptophan

Physiology: 7X4=28 Marks

Experiments to be performed in Frog/Bird/Mammal (four experiments each of 7 marks)

- (i) Enumeration of total RBC
- (ii) Estimation of haemoglobin (gm/ 100 ml)
- (iii) Determination of ESR of blood
- (iv) Determination of BT and CT
- (v) Determination of O₂uptake by terrestrial animal
- (vi) Simple heart-beat recording and muscle curve determination by drum method

Dissection and display of any four of the following endocrine glands in mammals:

- (i) Gonad, Thyroid, adrenal, Pancreas, Pituitary, and Pineal gland (16 Marks)
- (ii) Identification and commenting upon the histological slides (Four in number of the following): 16 Marks
Pituitary, Adrenal, Ovary, Testis, Islet of Langerhans, Thymus, Thyroid, Parathyroid and vaginal smear

Practical record 10 Marks

Viva 10 Marks

Books:

1. PS Verma, Advanced Practical Zoology (S Chand Pub)
2. DR PV Chadha, Hand Book of Experimental Physiology, (Jaypee Brothers)
3. V Banerjee, A text book of Vertebrate Practical (Anmol Pub)