नोटः प्रथम एवं द्वितीय 02 प्रष्न पत्र हल करना अनिवार्य है। वैकल्पिक ग्रुप तृतीय एवं चतुर्थ में से कोई 01 प्रष्न पत्र हल करना अनिवार्य है। कुल 04 प्रष्न पत्र हल करना अनिवार्य है।

नोटः प्रत्येक खण्ड (प्रष्न पत्र) को पृथक्–पृथक् उत्तर–पुस्तिका में लिखना अनिवार्य है।

Note: Each section (Question Paper) is compulsorily written on separate answer sheet.

FR-1641

M.Sc. (Fourth Semester) Examination, 2020

ZOOLOGY

Paper: First

(Animal Behaviour and Neurophysiology)

Maximum Marks: 40

Note: Attempt all questions. Each question carries equal marks. Each question must be answered in maximum 800 Words.

1. Discuss mechanical precipitation in detail.
2. Describe hormonal control of behaviour.
3. Give an account of migration in fishes and birds.
4. Describe “parental care” behavior in detail.
5. Write a brief essay on Thermoregulation.

FR-1642

M.Sc. (Fourth Semester) Examination, 2020

ZOOLOGY

Paper: Second

(Gamete Biology, Development and Differentiation)

Maximum Marks: 40

Note: Attempt all questions. Each question carries equal marks. Each question must be answered in maximum 800 Words.

1. Write the process and biochemistry of ‘Fertilization’.
2. Describe embryo transfer technology.
3. What is placenta? Describe its types and physiology.
4. Describe cell commitment and differentiation.
5. Describe cell diversification in early amphibian embryo.

FR-1643

M.Sc. (Fourth Semester) Examination, 2020

ZOOLOGY

Paper: Third (A) (Optional)

(Ichthyology (Fish): Structure and Function)

Maximum Marks: 40

Note: Attempt all questions. Each question carries equal marks. Each question must be answered in maximum 800 Words.

1. Give an outline classification of fishes proposed by Berg.
2. Give a detail account of accessory respiratory organs in fishes.
3. Describe the process of excretion in fishes.
4. Describe sound producing organs and significance of sound production in fishes.
5. Write an essay on poisonous and venomous fishes.

FR-1644

M.Sc. (Fourth Semester) Examination, 2020

ZOOLOGY

Paper: Third (B) (Optional)

(Cell Biology)

Maximum Marks: 40

Note: Attempt all questions. Each question carries equal marks. Each question must be answered in maximum 800 Words.

1. Describe the process of DNA methylation.
2. What is the significance of DNA repair?
3. Describe stress genes and their activity.
4. Give detail account of amplification during development with special response to 58 RNA Genes.
5. Explain organization of Homoeoboxes.

FR-1645

M.Sc. (Fourth Semester) Examination, 2020

ZOOLOGY

Paper: Third (C) (Optional)

(Entomology)

Maximum Marks: 40

Note: Attempt all questions. Each question carries equal marks. Each question must be answered in maximum 800 Words.

1. Describe different insect head types and their modification as per habit and habitat.
2. Explain the structure of alimentary canal and physiology of digestion.
3. Write a note on insect immunity and their importance.
4. Draw a labeled diagram of insect egg and describe the process up to the formation of Blastoderm.
5. Describe the life cycles of any two pests of Soybean with diagram.

FR-1646

M.Sc. (Fourth Semester) Examination, 2020

ZOOLOGY

Paper: Third (E) (Optional)

(Biology of Vertebrates Immune System)

Maximum Marks: 40

Note: Attempt all questions. Each question carries equal marks. Each question must be answered in maximum 800 Words.

1. Explain in detail antigen presentation.
2. Explain T - cells inactivation.
3. Describe immunoglobulin classes and their properties.
4. Explain complex mediated type- III reaction.
5. Describe an assay on monoclonal antibody technology.

FR-1647

M.Sc. (Fourth Semester) Examination, 2020

ZOOLOGY

Paper: Fourth (A) (Optional)

(Pisciculture and Economic Importance of Fishes)

Maximum Marks: 40

Note: Attempt all questions. Each question carries equal marks. Each question must be answered in maximum 800 Words.

1. Describe the wet bundle breeding of crabs.
2. Define induced breeding and explain importance of drugs in this technique.
3. Give an account on 'Pearl industries' in India.
4. Write a detail account on sewage fed fisheries.
5. Write an essay on economic importance of Fisheries.

FR-1648

M.Sc. (Fourth Semester) Examination, 2020

ZOOLOGY

Paper: Fourth (E) (Optional)

(Molecular Endocrinology and Reproductive Technology)

Maximum Marks: 40

Note: Attempt all questions. Each question carries equal marks. Each question must be answered in maximum 800 Words.

1. What is recombinant DNA technology? Explain its significance in the treatment of endocrine disorders.
2. Describe first messenger – second messenger theory of hormone action.
3. Describe in details the involvement of hormones in regulation of energy metabolism.
4. Describe the bioassay of gonadotrophin.
5. Describe the procedure of embryo transfer technology.

FR-1649

M.Sc. (Fourth Semester) Examination, 2020

ZOOLOGY

Paper: Fourth (F) (Optional)

(Limnology and Fish Productivity)

Maximum Marks: 40

Note: Attempt all questions. Each question carries equal marks. Each question must be answered in maximum 800 Words.

1. Describe principles and development of Limnology.
2. Give detail account of role of organic and inorganic carbon in fresh water.
3. Give detail account of benthic biota and their significance.
4. Describe inland fish breeding in detail.
5. Give detail account of fish preservation and transport of fish.

FR-1650

M.Sc. (Fourth Semester) Examination, 2020

ZOOLOGY

Paper: Fourth (H) (Optional)

(Proteins Nucleic Acids and Metabolic Regulation)

Maximum Marks: 40

Note: Attempt all questions. Each question carries equal marks. Each question must be answered in maximum 800 Words.

1. Describe the methods of protein purification.
2. Give a detail description on lipoproteins, its classification and structural analysis.
3. Explain DNA Methylation.
4. What is RFLP? Describe its use in biology and techniques by which RFLP can be determined.
5. Describe biosynthesis of Pyrimidine nucleotides.

FR-1651

M.Sc. (Fourth Semester) Examination, 2020

ZOOLOGY

Paper: Fourth (I) (Optional)

(Sericulture)

Maximum Marks: 40

Note: Attempt all questions. Each question carries equal marks. Each question must be answered in maximum 800 Words.

1. Write an essay on cultural practices of Mulberry.
2. Explain the classification of races of *Bombyx mori*.
3. Explain feeding, bed cleaning and spacing in reference of silkworm rearing.
4. What is the causative organism of flacherie? Write the symptoms of disease.
5. Write a detail note on silk reeling operation.