R6723	Sub. Code 509201

M.Sc. DEGREE EXAMINATION, APRIL – 2022

Second Semester

Zoology

ANIMAL PHYSIOLOGY

(CBCS – 2019 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

1. Salivary gland
2. Blood groups
3. Muscle proteins
4. Structure of Nephron
5. ECG
6. Structure of Nerve
7. Homeotherms
8. Buoyancy
9. Pituitary gland
10. Circadian rhythm

Part B (5 × 5 = 25)

Answer **all** the questions, choosing either (a) or (b).

11. (a) What are the major changes happend to the ingested food in the stomach?

Or

(b) How the digested food get absorbed into the body system?

12. (a) Write short note on cardiac cycle.

Or

(b) Explain the mechanism of waste elimination in kidney.

13. (a) Draw the ultra structure of skeletal muscle.

Or

(b) Briefly discuss about the neurotransmitters.

14. (a) What are the adaptations of organisms for cold and freezing?

Or

(b) Write short note on hormonal control of osmoregulation.

15. (a) Write short note on the mechanisms of hormone action.

Or

(b) What is endogenous rhythm?

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Discuss about the digestion and absorbtion of carbohydrates.

17. Describe the structure and function of cardiovascular system.

18. Explain about the mechanism of synaptic transmission.

19. How do the fresh water and marine fishes regulate their osmotic imbalance?

20. Write about the neuro endocrine regulation.

———————

R6724	Sub. Code
	509202

M.Sc. DEGREE EXAMINATION, APRIL – 2022.

Second Semester

Zoology

MICROBIOLOGY

(CBCS – 2019 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the following questions.

1. Plasmid

2. Corona virus

3. Growth curve

4. Lyophilisation

5. Give any two (2) symptoms of swine flu

6. Zoonotic diseases

7. Opportunistic pathogen

8. Subcutaneous infection

9. Synbiotic

10. Fermentation

Part B (5 × 5 = 25)

Answer **all** the following questions, choosing either (a) or (b).

11. (a) Explain the morphology of virus.

Or

(b) Differentiate between gram positive and gram negative bacteria.

12. (a) Discuss in brief microbial nutrition.

Or

(b) Explain any two biochemical reactions for microbial identification.

13. (a) Write a short note on pathogenicity of any one staphylococcal disease.

Or

(b) Explain Coombs test.

14. (a) Define

(i) Cross infection

(ii) Terminal infection.

Or

(b) Write a short note on poultry disease.

15. (a) Write brief account on pasteurization.

Or

(b) Describe in detail intoxication.

Part C

(3 × 10 = 30)

Answer any **three** of the following questions.

16. Write a detailed note on morphology of eukaryotic cell with diagram.

17. Define pure culture. Explain any three pure culture methods with simple diagrams.

18. What is swine flu? Explain its pathogenicity and structure.

19. Define infection. Explain its various mode of transmission.

20. Explain the steps involved in beer preparation with schematic diagram.

———————

R6725	Sub. Code
	509203

M.Sc. DEGREE EXAMINATION, APRIL – 2022.

Second Semester

IMMUNOLOGY

(CBCS – 2019 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

Define/Explain all of the following :

1. Antigen
2. Interferons
3. T cell
4. IgG
5. Vaccine
6. Immunisation
7. Xenograft
8. Systemic lupus erythematosus
9. Western blot
10. ELISA

Part B (5 × 5 = 25)

Answer **all** the questions, choosing either (a) or (b).

11. (a) Write a note on different types of antibodies.

Or

(b) Give an account on the primary lymphoid organs with labelled diagram.

12. (a) Differentiate between T and B cells.

Or

(b) Explain why neutrophils and macrophages are called professional phagocytes.

13. (a) Differentiate between humoral and cell mediated immunity.

Or

(b) What is infection and explain how it elicits immunity.

14. (a) What are the different types of transplantation.

Or

(b) Explain the dissimilarities between benign and malignant tumour.

15. (a) What are primary and secondary antibodies and give as uses?

Or

(b) What is the principle of immunocytochemistry and its significance?

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Explain antigen and antibody interactions with suitable examples.

17. Write a note on haematopoiesis and explain the process of cell differentiation.

18. Define hypersensitivity and discuss its types.

19. Write short notes on the various immnunodeficient diseases.

20. Discuss the various techniques used in ELISA, RIA and western blot.

———————

R6726	Sub. Code
	509204

M.Sc. DEGREE EXAMINATION, APRIL – 2022.

Second Semester

Zoology

GENETICS

(CBCS – 2019 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define multiple alleles.

2. What is sex-linked inheritance?

3. Differentiate aneuploidy from polyploidy.

4. List any two examples or chromosomal abnormalities.

5. Write about Central dogma.

6. Define recombination.

7. What is polymorphism?

8. Give the concept of Neo – Lamarckism.

9. Explain Hardy-Weinberg's law.

10. What is circadian rhythm?

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Give a short note on sex determination in humans.

Or

(b) Describe briefly about polygenic inheritance.

12. (a) Discuss briefly about tetrad analysis.

Or

(b) Explain euploidy.

13. (a) 'Concept of gene-gene expression' – Discuss.

Or

(b) Write a short note on DNA mutation.

14. (a) Enumerate the evidences for natural selection.

Or

(b) Differentiate genetic variation from non-genetic variation.

15. (a) Write a short note on gene duplication.

Or

(b) List the importance of molecular clock.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Elucidate the mendelian traits in man.

17. How to do chromosomal mapping with molecular markers?

18. Describe the sequential expression of genes with Drosophila as an example.

19. Write the stages in Primate evolution.

20. Give an essay on population genetics.

———————

R6727	Sub. Code
	509504

M.Sc. DEGREE EXAMINATION, APRIL – 2022.

Second Semester

Zoology

Elective : ECONOMIC ZOOLOGY

(CBCS – 2019 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

All questions carry equal marks.

1. Ladybird beetles
2. Menagerie
3. White revolution
4. White leghorn
5. Silk gland
6. Bee stock
7. FAO
8. Aqua-phonics
9. Poultry-fish Culture
10. Integrated pig farming

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

All questions carry equal marks.

11. (a) Explain the different types of parasitoid with example.

Or

(b) Write a short note on sheep Farming.

12. (a) Explain the nutritional management in dairy farming.

Or

(b) Distinguish the farming practice of broilers and layers.

13. (a) Classify the silkworms with examples.

Or

(b) Explain the economic importance of honey production.

14. (a) Explain the current status of freshwater aquaculture in India.

Or

(b) Discuss about aqua-phonics and its importance.

15. (a) Write briefly on benefits of integrated Farming.

Or

(b) Explain the cost analysis of integrated farming.

Part C

(3 × 10 = 30)

Answer any **three** questions.

All questions carry equal marks.

16. Give an account on establishment of zoos and its significance.

17. Explain the national and international status of poultry farming.

18. Explain the rearing of silkworm and its economic importance.

19. Write an essay on freshwater prawn hatchery practices.

20. Discuss the national and international status of integrated farming.

———————

R6728	Sub. Code
	509401

M.Sc. DEGREE EXAMINATION, APRIL – 2022.

Fourth Semester

Zoology

ANIMAL BIOTECHOLOGY

(CBCS – 2019 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Differentiate Genetic engineering and gene-editing.
2. Comment on Transgenesis.
3. Justify the characters of pBR322.
4. Brief about mouse *cre* system.
5. Comment on Florescence *taq*.
6. Describe DNA microarray.
7. List out the types of animal cells.
8. Comment on biosensors.
9. Define gene knock-in.
10. Brief the merits of cryopreservation.

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Elaborate the composition and functions of GEAC in India.

Or

(b) Explain the importance of rDNA technology in human welfare.

12. (a) Discuss the various types of reporter genes for animal model.

Or

(b) Compute a method for cDNA library construction.

13. (a) Compare the methods of molecular labeling.

Or

(b) Demonstrate the Maxam and Gilbert method for gene sequencing.

14. (a) Differentiate primary cells culture and cell lines.

Or

(b) How animal cell culture used for the production of *tPa*? Explain.

15. (a) Analyse the variables influencing the success of embryo transfer.

Or

(b) Demonstrate the method used for transgenic cattle.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Justify the needs of GMOs with suitable examples.

17. Built a strategy to express a foreign gene in *Bacillus subtilis*.

18. Elaborate the methods and applications of DNA fingerprinting.

19. Discuss the methods of tissue engineering and regenerative medicines.

20. Explain the use of reproductive techniques to produce transgenic goats.

———————