Chattogram Veterinary and Animal Sciences University
M.S. in Animal Breeding and Genetics
(January- June semester) Final Examination-2023
Course: Genetics; Course code: GNT- 601
Full Marks- 40; Time- 2.00 hrs
Date- 09/07/2023

Answer any four questions. Figures in the right margin indicate the full marks.

1. a) Briefly describe the scope and application of genetics for the improvement of livestock in Bangladesh. — 5.0

   b) What are the factors you will consider for selecting genetic materials in your research experiment? Discuss in details. — 5.0

2. a) What do you mean by co-dominance? Briefly describe the lethal gene action in poultry. — 5.0

   b) State the law of independent assortment and interpret with suitable example. — 5.0

3. a) Define epistasis. Briefly describe non-epistatic intergenic genetic interaction in poultry. — 5.0

   b) Explain the term expressivity and penetrance? Briefly describe the factors affecting the gene expression in individual. — 5.0

4. a) What do you mean by sex related traits? Explain sex limited traits in livestock. — 5.0

   b) What is point mutation? Write down the genetic and phenotypic effects of mutation. — 5.0

5. a) Write down the differences between leading and lagging strand? What are the enzymes that involved for DNA replication? — 5.0

   b) What do you mean by RNA splicing? Write down the translation process for protein biosynthesis. — 5.0

Chattogram Veterinary and Animal Sciences University
MS in Animal Breeding and Genetics
January to June Semester Final Examination-2023
Subject: Physiology of Reproduction
Course Code: PHR-601(T)
Full marks-40, Time-2 hours
Date: 13/07/2023

(Answer any **four** questions from the following and Figure in the right margin indicate full marks)

1. a) What do you mean by luteal and follicular phase? Mention normal ranges of reproductive behavior in different animal species.   5.0

    b) Write a short note about estrous synchronization?   5.0

2. Briefly discuss about the maternal and neonatal behavior and association with neonatal mortality.   10

3. a) Define pregnancy. Write down the 3C of good conception.   5.0

    b) Write down the factors that contribute to poor conception rate.   5.0

4. Briefly discuss about the hormonal control of male reproduction and process of spermatogenesis.   10

5. a) What is reproduction? Briefly discuss the types and events of reproduction.   4.0

    b) Write down the relationship among Animal Reproduction, Genetics, Breeding and Physiology.   4.0

    c) Why is it important to study the physiology of animal reproduction?   2.0

6. Write down Short note on (any two):   5×2

    a) Fertilization   =10

    b) Parturition

    c) Estrous cycle

    d) Sexual Behavior

Chittagong Veterinary and Animal Sciences University
MS in Animal Breeding and Genetics
January-June semester final examination-2023
Course: **Reproductive Nutrition**
Course code: RPN-601(T)
Full marks: 40; Time: 2 hours

Answer **any four** of the following questions. Figures in the right margin indicate the full marks.

1. (a) Illustrate the ruminant model for nutrient-gene interactions.   5

    (b) Discuss about the mediators of nutrient-gene interactions in ruminants.   5

2. (a) List major nutrients and their effect on reproduction and fertility.   5

    (b) How do nutritional imbalances affect hormones essential for reproduction?   5

3. (a) Enlist reproductive consequences for the deficiency and the excess of minerals.   5

    (b) Explain, how nutrition and growth of the fetus are related?   5

4. (a) Discuss the negative effect of overfeeding on reproduction.   5
    (b) Write a short note on relation between vitamins and the reproductive function of   5
        cattle.

5. (a) Write in short about the effect of nutrition on gonadotrophin secretion in dairy   5
        cattle.
    (b) What is flushing? How does flushing affect prolificacy in small ruminants?   5

Chattogram Veterinary and Animal Sciences University
M S in Animal Breeding and Genetics
January-June Semester Final Examination 2023
Course Title: Animal Breeding Principles & Systems
Course Code: ABP-601 (T)
Total marks: 40
Time: 2 hour
Exam. Date: 11/07/2023

Answer any 2 (two) questions from the following. Values are indicated in the right margin in each question.

1. a) Illustrate mixed model equation. Write down its application for estimating BLUP **3.0**
       breeding value.
    b) Indicate the current dairy cattle breeding policy in Bangladesh. Write the **7.0**
       drawbacks and prospects of this policy for dairy development.
    c) What is breeding design? How will you design a structured genetic **10.0**
       improvement program for meat development in Bangladesh?

2. a) What is the breeding objective? How will you develop the breeding objective **10.0**
       from a dairy herd consisting of 1000 cows having an average live weight is 310 kg
       and each cow produces 2200 liter milk and 90 kg fat per lactation. The unit price
       for milk fat (butter fat) and meat is BDT 80/=, 950/=, and 750/= respectively.
    b) Justify marker-assisted selection is best than traditional selection methods? **10.0**
       Enumerate marker-assisted selection for increased milk production from dairy cattle.

3. a) Explain additive gene action is not responsible for heterosis for a particular trait. **5.0**
    b) How will you develop a multitrait selection index for bulls, when the breeding **10.0**
       objective is to increase egg production.
    c) What do you mean by genetic gain? List the causes of genetic gains of milk from **5.0**
       cow. Estimate the genetic gains for milk yield using the bull-to-cow and cow-to-bull
       pathway of selection.

Chittagong Veterinary and Animal Sciences University
MS in Animal Breeding and Genetics
January-June semester final examination-2023
Course: **Breeding for disease resistance in farm animals**
Course code: BDR-601(T)
Full marks: 40; Time: 2 hours

Answer **any four** of the following questions. Figures in the right margin indicate the full marks.

1. (a) What do you mean by disease resistance? How can you differentiate disease resistance from disease tolerance and disease resilience? 5

   (b) List five important disorders for cattle and chicken for which there is documented evidence of genetic resistance or tolerance. 5

2. (a) What critical criteria should be considered while developing a plan for breeding for disease resistance in livestock? 5

   (b) What opportunities and challenges can be encountered in implementing a genetic selection for disease resistance in farm animals? 5

3. (a) What is major histocompatibility complex (MHC)? Why is MHC the most important genetic system for infectious disease resistance in vertebrates? 5

   (b) Elucidate the genomic organization of the MHC region in bovines. 5

4. (a) Discuss the importance of genetic variability in selecting animals resistant to disease. 4

   (b) Write a short note on molecular markers for resistance against infectious diseases. 6

5. (a) Define marker-assisted selection and marker-assisted introgression. 4

   (b) Discuss current applications and prospects of breeding for disease resistance in a developing country. 6

Chittagong Veterinary and Animal Sciences University
Department of Genetics and Animal Breeding
MS in Animal Breeding and Genetics
(January-June semester) Final examination- 2023
Subject: Subject: Conservation Biology& Genetic Diversity
Course Code: CGD-601
Full marks: 40; Time: 2 hour

Answer any four questions from the following. Figure in the right margin indicate full marks.

1.	Define conservation biology and biodiversity. What are the major threats of biodiversity?	10
2.	Briefly discuss about the several types of habitat destruction.	10
3.	Write a short note about overexploitation.	10
4.	How you will reintroduction Indian Peafowl in the forest of Bangladesh?	10
5.	Write a short note about ecotourism and conservation.	10
6.	Discuss about the term "Restoration ecology".	10