Chattogram Veterinary and Animal Sciences University

Department of Animal Science and Nutrition

Semester Final Exam of MS in Animal Science (January-June/2022)

Course Code: ABS-601, Course Title: Applied Biostatistics

Full Marks: 40 Time: 2 hours

*[Answer any **five** questions. Figures in the right margin indicate full marks. Split answering is not recommended]*

1. Dry matter intake (DMI) is largely a parameter of feeding behavior, affected by changes in meal size, duration, and frequency, as well as feeding time and rate. DMI was positively associated with feeding time. How do you find this relation in statistics? Define and state the properties of this relational measures. Specifically, for every hour increase in feeding time per day, DMI is predicted to increase by 0.96 kg/day. How do you estimate this relation in statistics? Define and state of this terminology. 8.0

2. Eighteen sheep with two different ages were selected for sixty days long feeding trial with urea molasses straw (UMS). The mean organic matter (OM) found significantly different for two age groups. How do you test it for significantly different mean of OM? 8.0

3. A household survey was conducted for the medicinal cost of their livestock. Household head demand that the spent variability on treatment for cows was higher than that for chickens. How do you test the significance that the treatment spent variability was higher for cows than chickens? 8.0

4. What is non-probability sampling? Briefly describe the all techniques of it. 8.0

5. Define nonparametric test. Write application situation of nonparametric test. Enlist the advantages and disadvantages of non-parametric test. 8.0

6 Twelve native growing bulls of 237 kg live weight and 35 months old were randomly allocated to three treatments fed solely rice straw enriched with: (1) 3% urea (US), (2) 3% urea + 15% molasses (UMS) and (3) 3% urea + 30% rice gruel (UGS). The feeding trial continued for sixty days. Test whether there is any significant mean live weight difference for three treatments. 8.0

7 Livestock treatment cost was recorded from government animal healthcare provider, pharmacy and village doctors. The cost amount doesn't follow normal distribution. Is there any significant mean cost difference for different source of treatment? 8.0

MS in Animal Science
Final Examination January to June Semester/2022
Sub: Feed Processing and Evaluation
Course code: FPE-601
Marks: 40 Time: 2 hours

(Answer any four questions from the following in which **Q no 1** is compulsory. Figure in the right margin indicates full marks)

1. a. What are the factors you should consider to set up and run a feed mill? 5.0

   b. Briefly discuss the steps for making Mash feed in feed mill. 5.0

2. a. Discuss briefly about the storage of raw material for feed milling. 4.0

   b. Write the important factors to be considered while selecting a mixer, a cooler and a screw Conveyors. 6.0

3. a Discuss briefly the conditioning effect, pelleting effect, Drying & cooling effect on pellet quality. 6.0

   b Discuss briefly the effects of feed processing upon feed quality. 4.0

4. What do you mean by Grinding and conditioning? Discuss briefly about the procedure of chemical evaluation of feed. 10.0

5. Write short notes on (Any two) 5.0 x 2 = 10
   a. Energy estimation
   b. Pellet cooler
   c. Adding of liquid in feed

Department of Animal Science & Nutrition

MS in Animal Science

Semester Final Examination 2022

Semester: January-June 2022

Subject: Small Ruminant Production

Course code: SRP-601

Total marks: 40 **Total time: 2 hours**

Figures in the right margin indicate full marks. Answer to the following questions **(any four)**:

1. a) "Sheep and goat have versatile adapted mechanisms" how and why? Explain. 5.0

   b) Shortly describe the different management system of sheep and goat. 5.0

2. a) Explain the opportunity for exploring sheep and goat production in Bangladesh. 5.0

   b) How can you handle fattening stock and breeding bucks? Describe briefly. 5.0

3. a) Shortly describe the feeding behavior of sheep and goat. Mention the standard daily nutrient requirements for maintenance of sheep and goat. 5.0

   b) What is the appropriate age or weight at first mating? Write in details about the causes of reproductive failures in ewes and does. 5.0

4. a) What are the ways of estimation of growth of sheep and goat? Explain on your words. 5.0

   b) List out the feed additives for sheep and goats with its benefits of supplementation. 5.0

5. a) What is flushing? Shortly describe the benefits of flushing. 5.0

   b) State briefly about the reproduction physiology of sheep and goat. 5.0

6. Shortly describe about a typical farm planning for 20 goats. 10.0

-----The end-----

Department of Animal Science & Nutrition

MS in Animal Science

Semester Final Examination 2022

Semester: January-June 2022

Subject: Livestock Farming and Climate Change

Course code: LFC-601

Total marks: 40 **Total time: 2 hours**

Figures in the right margin indicate full marks. Answer to the following questions **(any four)**:

1. a) Differentiate specialized vs integrated farming system. Mention the advantages of integrated farming system. What are the problems of present day agriculture with its solution through IFS. 5.0

   b) What do you mean by sustainable farming system? Illustrate how different components and resource flow in multi-enterprise agriculture pig and fish farming model.

2. a) What do you mean by enteric methane emission? Explain how carbohydrate fermentation produces methane in ruminants. 5.0

   b) "Global warming threatened the survivability of animal on earth"-Explain yourself. Illustrate the integrated farming system model in a diagram. 5.0

3. a) Distinguish between natural and manmade disaster with examples. Categories different type of disaster. 5.0

   b) Who are the super victims of natural disasters in Bangladesh? What measures need to be taken before, during and after natural catastrophes? 5.0

4. a) What are the different integrated farming models are applicable in Bangladesh? Sketch any two of them. 5.0

   b) State the regulatory and institutional framework for disaster management in Bangladesh. 5.0

5. a) Mention different components, elements and constraint of integrated farming system. 5.0

   b) Explain briefly about the disaster management cycle. 5.0

------The end ------

Chittagong Veterinary and Animal Sciences University

M S in Animal Science

January-June Semester Final Examination 2022

Course title: Animal Reproduction

Course Code: ARP-601 (T)

Total marks: 40

Time: 2 hour

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

1. a) What do you mean by the term "reproductive cycle"? Discuss the reproductive pattern of a ewe. **7**

   b) Describe the causes of infertility of bull and how will you improve the infertility of a breeding bull. **5**

   c) What is sex selection? Describe a method for separation X and Y bearing sperm of a bull with its' limitation? **8**

2. a) What is useful life? State the useful life for a cow and bull. **3**

   b) Define hormone? Write down the functions of hormones those are involved in estrus and pregnancy of cow. **7**

   c) Write down the impact of AI and MOET for the genetic improvement of milk production from cow. **10**

3. a) Define semen. Indicate the dose, number and volume of semen for both natural and artificial insemination of cow, sow, ewe, duck and dear. **6**

   b) State the principles of semen preservation? Write in details the steps of bull semen preservation. **8**

   c) Draw and label the female reproductive organ of a doe and mention the major functions of different parts. **6**

Chattogram Veterinary and Animal Sciences University
Department of Animal Science and Nutrition
MS in Animal Science
Semester Final Examination (January-June, 2022)

Course Title: Large Ruminant Production System (Theory)

Course Code: LRP-601

Time: 2 hours | Full marks: 40

Answer any four (4) questions. Figures in the right margin indicate full marks

1.	a)	Briefly describe the development of dairy industry in Bangladesh.	5.0
	b)	Discuss the present status and future prospects of buffalo rearing in Bangladesh.	5.0
2.	a)	Write down the parameters of importance to manage the reproductive performances in a farm.	5.0
	b)	Explain how artificial insemination time can improve the conception rate of the farm.	5.0
3.	a)	What will you suggest a farmer who wants to select a suitable land for a dairy farm?	5.0
	b)	Write down the guidelines for transportation of livestock.	5.0
4.	a)	Briefly discuss any five laws of livestock sectors to produce quality products in Bangladesh.	5.0
	b)	Write down the ante-mortem and post-mortem judgement symbols for livestock.	5.0
5.	a)	Shortly describe the care and management of a dairy calf after birth.	5.0
	b)	Classify different feed stuffs for livestock with examples.	5.0
6.	a)	Write down the guidelines for feeding dairy cattle.	5.0
	b)	Discuss the nutrient requirements of a dairy cow based on the butterfat content of milk.	5.0

Department of Animal Science and Nutrition
Chattogram Veterinary and Animal Sciences University
MS in Animal and Poultry Nutrition Final examination
January to June Semester 2021
Subject: **Nutrition Studies and Research (NSR-601)**
Full marks: 40, Time: 2 hours

Figures in the right margin indicate full marks. Answer any **FOUR** from the following questions. Fragmented answers will not be taken into consideration.

1. a) Write down the difference between true digestibility and apparent ileal digestibility. 5.00

   b) How can you measure digestibility of Napier fodder in a conventional way? 5.00

2. a) How Volatile Fatty Acids (VFA) are produced in rumen? Describe the procedure of VFA estimation from rumen fluid. 5.00

   b) Give a clear concept on microbial protein production in rumen. 5.00

3. a) What is identification and prioritization of a research problem? 2.00

   b) As a nutritionist, how will you conduct nutritional research? 8.00

4. Write down the uses of different markers in partitioning the digestive function of a ruminant. 10.00

5. Write short note: Determination of forages intake by grazing herd. 10.00

MS in Animal and Poultry Nutrition
Final Examination January to June Semester/2022
Sub: Therapeutic Nutrition
Course code: TPN-601
Marks: 40 Time: 2 hours

(Answer any four questions from the following in which **Q no 1** is compulsory. Figure in the right margin indicates full marks)

1.	a.	Define Therapeutic Nutrition. How will you identify that dairy cattle are suffering from nutritional problem?	5.0
	b.	Indicate the supportive clinical tests, treatment and prevention of White Muscle Disease, Retained Placenta and infertility.	5.0
2.		What do you mean by malnutrition and Mal absorption? Indicate the major causes, remedies and preventive measure of Malnutrition in ruminant.	10.0
3.		Indicate the possible problems associated due to overfeeding and under feeding of sheep/Goat and mention the diagnosis and prevention of such problems.	10.0
4.	a.	List the common vitamin deficiency diseases/disorder of Ruminants. Write down the deficiency symptom and sources of Vit E, VitA, VitK in cattle.	5.0
	b.	Write down the feeding system of sick dog and cat.	5.0
5.	Write short notes on (Any two)		5.0 x2 = 10

a. Cystic Ovaries.
b. Abortion.
c. Obesity of dog and cat.

Department of Animal Science and Nutrition
Chittagong Veterinary and Animal Sciences University
MS in Animal and Poultry Nutrition
Semester Final Examination (January-June 2022)
Course Title: Feed Biotechnology (Theory)
Course code: FBT-601, Full marks: 40, Time: 2 hours

Figures in the right margin indicate full marks. Answer any four (4) questions. <u>All questions must be answered chronologically!</u>

1.	Discuss in detail the dynamic fields of feed biotechnology and their applications for upgrading yield and nutritive values of unconventional feeds and forages available in Bangladesh.	10.0
2.	Discuss the production and preservation procedure of different types of probiotics, prebiotics, toxin binders, mold inhibitors and pellet binders used in poultry industry.	10.0
3.	Discuss the fundamental role of molecular techniques and their possible applications in the field of feed biotechnology for improving productivity of indigenous cattle.	10.0
4.	Discuss the prospects and potentials of GM foods in developing countries. What might be the unanticipated lethal consequences of GM foods in animal and human body?	10.0
5.	Discuss the manufacturing process for different type of protein concentrate, vitamin-mineral premix and water-soluble vitamins for commercial use of ruminant animal.	10.0

Chattogram Veterinary and Animal Sciences University

Department of Animal Science and Nutrition

Semester Final Exam of MS in Animal and Poultry Nutrition (January-June/2022)

Course Code: ABS-601, Course Title: Applied Biostatistics

Full Marks: 40 Time: 2 hours

*[Answer any **five** questions. Figures in the right margin indicate full marks. Split answering is not recommended]*

1. It was observed that milk yield was positively associated with feeding time. Mention the relationship measures scale and define it. Specifically, for every hour increase in feeding time per day, milk yield is predicted to increase by 0.034 kg/day. How do you estimate this relationship? Define and state the properties of it. 8.0

2. Twelve native growing bulls of 250 kg live weight and 36 months old were randomly selected for urea molasses straw (UMS) and the feeding trial continued for sixty days. The mean metabolizable energy (ME) intake was significantly different from 348 kJ/kg. How do you test this claim? 8.0

3. What is probability sampling design? Briefly describe the all probability sampling design. 8.0

4. A total 30 Holstein cows were randomly selected to evaluate the milk production for silage which are harvested in different times like as early dent, quarter milkline, two-thirds milkline, and black layer stages. Test whether there is any significant mean difference of milk production for harvesting the corns of four different times. 8.0

5. What is non-parametric test? Describe the procedure of Mann-Whitney test. 8.0

6. A 20 random sample was selected from a dairy farm to evaluate the diets on milk production. Three types of feed were given and the milk yield was recorded. Interestingly, the recorded milk production was not normally distributed. How do you test the significance of milk production was same for three types of feed? 8.0

7. Whole plant corn was harvested at early dent, quarter milkline, two-thirds milkline, and black layer stages to evaluate the effects of maturity on intake, digestion, and milk production when corn was fed as silage in the diet. For this experiment 20 multiparous Holstein cows were selected. Milk production was observed when silage harvested at two-thirds milkline stage and early dent stage. Test whether there is any significant mean difference of milk production for two-thirds milkline stage and early dent stage. 8.0

MS in Animal and Poultry Nutrition
Final Examination January to June Semester/2022
Sub: Feed Processing and Evaluation
Course code: FPE-601
Marks: 40 Time: 2 hours

(Answer any four questions from the following in which **Q no 1** is compulsory. Figure in the right margin indicates full marks)

1. a. Indicate the chemical changes in feed during processing of grain, and discuss their effect upon feed quality. 4.0

   b. Discus briefly about two grain and three roughage processing methods. 6.0

2. List the different handling equipment required in feed mill and indicate the basis of selection of Bucket elevator and chain conveyors 10.0

3. a. What do you mean by Physical evaluation? Discuss briefly about the procedure of physical evaluation of feed. 5.0

   b. Indicate the characteristics of selection and purchase of raw materials. 5.0

4. What do you mean by premixing of feed? Discuss the methods of assessing energy and Vitamin of feed. 10.0

5. Write short notes on (Any Two) 5.0 x2 = 10
   a. Pellet feed Making
   b. Grinder – Hammer Mill
   c. Blending of premixes

Department of Animal Science and Nutrition
Chattogram Veterinary and Animal Sciences University
MS in Animal and Poultry Nutrition
Semester Final Examination (January-June 2022)

Course Title: Modern Techniques in Nutrition Studies (Theory)

Course code: MTN-601, Full marks: 40, Time: 2 hours

Figures in the right margin indicate full marks. Answer any four (4) questions. <u>There is no way to consider fragmented answers!</u>

1. How should you substantiate that the Near Infra-Red Spectroscopy (NIRS) is not a hypothetical dream rather a real breakthrough in the field of nutrition studies? Should we intuitively replace it with traditional wet chemistry? How should you resolve the calibration bottlenecks of NIR while deemed essential for the unconventional hilly forages available in Chattogram Hill Tracts. Bangladesh? 10.0

2. What is the best method for tracing the ultra-critical quantity of metal components in forage sample? Despite spectrophotometric techniques why has atomic absorption spectroscopy been evolved in the field of nutrition studies? What is the principle, merit and demerit of this technique? 10.0

3. Do you think *in vitro* Menke's gas technique is applicable in the field of non-ruminant nutrition study? How should you proceed to estimate the *in vitro* organic matter degradability (IVOMD) for the fresh Napier grass in the Menke's gas technique? 10.0

4. Is nylon bag technique truly an *in vivo* technique? Discuss the implications and drawbacks of the technique? Under existing set up, *in vivo*, *in vitro* or *in sacco* - which technique will be more feasible for the field research in the farm-based campus, Hathazari, CVASU? 10.0

5. What are the implications of bomb calorimetry in nutrition studies? What is the available bomb calorimetry and how they are different in principle? How should you evaluate moringa leaf (*Moringa oleifera*) using bomb calorimetry? 10.0