

Chattogram Veterinary and Animal Sciences University
Department of Animal Science and Nutrition
Semester Final Exam of MS in Animal Science (January-June/2021)
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. A study was conducted to evaluate the relationship among on-farm welfare, milk production, and reproductive performance in dairy herds. Each one unit increase in the score for good feeding was associated with a certain amount of milk production. Which tool can be used to evaluate this relation? Write its properties and test the significance. 8.0
2. A total of 50 cows were randomly selected to observe the daily milk production of three types of farm. It was observed that the mean milk production was significantly different in three types of farm. How do you test the significance of this claim? 8.0
3. The objective of an observational study was to examine the association of herd-level feeding management factors, feed sorting, and milk production. The results support that herd-level management practices to promote feed access, such as increased feeding frequency and bunk space, may improve dry matter intake (DMI) and promote more balanced nutrient intake and greater milk production. Define the terminology, state the methods, and test the significance of this relation. 8.0
4. An interviewer was aimed to asked about the importance of veterinary profession in real life. For this goal he/she recruit university fresh student from all veterinary science faculty over the Bangladesh. Which sampling technique can be used to serve this purpose? Define and write application situation of this technique. What are the methods of applying this technique? Briefly describe any one technique. 8.0
5. Three newly prepared feeds were given randomly to the farms. The cows were categorized according to breed and age. The objective of the study was to evaluate the mean weight gain difference according to breed, age, and feed. Write details about the test of significance of these objectives. 8.0
6. Suppose you are currently observed the prevalence of foot and mouth disease (FMD) are increasing in different farms. A traditional treatment was applied on 20 cows in different farms and the affected surface area was measured in cm. After 10 days a new treatment was applied on the same cows and measured the affected surface area in cm. The data were not normally distributed. Is there any significant difference to reduce FMD with new treatment over the traditional one? 8.0
7. Describe the procedure of test of significance of independence. 8.0

Chittagong Veterinary and Animal Sciences University

Department of Animal Sciences and Animal Nutrition

M.S. in Animal Science

Semester final examination-2021

July-December'2021

Sub: Biotechnology in Animal Science (T)

Full marks-40: Time: 2 Hours

Answer any four questions from the following

1. a) Describe about the scope of biotechnology in Animal Science. 5
b) Write down the history of biotechnology. 5

2. a) Describe about the fermentation technology used in Animal Science 5
b) Mention about the fermented product used in Animal industry. 5

3. a) Describe about the production procedure of enzyme. 5
b) Write down the name of enzyme product related to animal industry with their function. 5

4. a) Explain that probiotic, Prebiotic, toxin binder and pellet binder are biotechnological product. 5
b) Describe about the probiotic production procedure. 5

5. Write short notes of any two 5X2=10
 - a) Genetic engineering
 - b) Tissue culture
 - b) Embryo Transfer

MS in Animal Science
Final Examination January to June Semester/2021
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 role of nutritionist and process technologist to run a feed mill successfully? Indicate different steps of feed manufacturing process. 6.0
 - b. Briefly discuss the steps for making Mash feed in feed mill. 4.0

2.
 - a. Mention the possible ways of evaluation animal feed and discuss briefly about the physical evaluation of feed stuffs. 4.0
 - b. Write the important factors to be considered while selecting a mixer, a screw Conveyors and bucket elevator. 6.0

3.
 - a. Mention the effect of size of ground ingredients, conditioning and cooling effect on pellet quality. 6.0
 - b. Discuss briefly about the storage of raw material for feed milling. 4.0

4.
 - a. Mention the name of different methods of grain and roughage processing. Discuss briefly two grain processing and two roughage processing methods suitable for Animals. 5.0
 - b. Discuss briefly the effects of feed processing upon feed quality. 5.0

5. Write short notes on (Any Four) 2.5x4 = 10
 - a. Energy estimation
 - b. Pellet cooler
 - c. Coating of Vitamin
 - d. Procurement of Raw Materials
 - e. Adding of liquid in feed

Chittagong Veterinary and Animal Sciences University

M S in Animal Science

January-June Semester Final Examination 2021

Course title: Animal Reproduction

Course Code: ARP-601

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 doe. 7
- b) Describe the causes of infertility 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 of a cow and bull give a specific example. 3
- b) What is hormone? Write down the functions of hormones those are involved in estrus and pregnancy of ewe. 7
- c) Write down the impact of AI and genetic engineering 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) What MOET? Write the steps of MOET for cattle. 8
- c) Draw and label the male reproductive organ of a buck and mention their major functions. 6

Department of Animal Science & Nutrition
MS in Animal Science
Semester Final Examination 2021
Semester: January-June 2021
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) What is integrated farming system? Mention the primary goals and objectives of integrated farming system. 5.0
b) State briefly the components and elements of integrated farming system. 5.0
2. a) Define global warming. What are the possible causes of global warming? Explain. 5.0
b) Briefly describe the impacts of global warming on human, animal and environment. 5.0
3. a) What is disaster management? Shortly describe about different type of disaster. 5.0
b) What measures need to be taken on livestock before, during and after natural catastrophes? 5.0
4. a) What is enteric methane emission? Describe the method of enteric methane emission from ruminants. 5.0
b) State the way of reducing enteric methane emission by modifying feeding strategies. 5.0
5. a) Write in details about the consequences of a disaster. 5.0
b) Explain briefly about the disaster management cycle. 5.0

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Chattogram Veterinary and Animal Sciences University
Department of Animal Science and Nutrition
MS in Animal Science
Semester Final Examination (January-June, 2021)
Course Title: Large Ruminant Production System (Theory)
Course Code: LRP-601

Time: 2 hours

Full Marks: 40

(Answer any five (5) questions. Figures in the right margin indicate full marks)

1. Discuss the history of development of Dairy Industry in Bangladesh. 8
2. What is service per conception? "Proper management can improve the efficiency of reproduction"-Explain. 8
3. If you are appointed as a farm manager in a dairy farm, how will you care and manage a neonate calf. 8
4. Differentiate between roughage and concentrate. Write down different methods of enrichment of poor quality roughages. 8
5. Model and describe a housing system for dairy cattle suitable in tropical region. 8
6. Describe a standard growth curve for bull. Discuss the traditional concepts of feeding beef cattle. 8
7. Write down the guidelines for the transportation of cattle for slaughter. Briefly discuss the resting period for cattle transported for 24 hours. 8

Department of Animal Science & Nutrition
MS in Animal Science
Semester Final Examination 2021
Semester: January-June 2021
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) Describe briefly about the origin and descendants of domestic sheep and goat. 5.0
b) Explain the environmental physiology of small ruminants. 5.0
2. a) Draw and label the layout of a sheep/goat house. 5.0
b) State briefly about management of kids and pregnant does. 5.0
3. a) Clarify the management procedures of breeding flocks of sheep and goat. 5.0
b) What do you mean by dipping? Write in details about the common chemicals which are used for dipping with its appropriate methods. 5.0
4. a) Shortly describe the comparative feeding behavior and digestive physiology in sheep/goat. 5.0
b) Shortly describe the feeding behavior of sheep and goat. Mention the standard nutrient requirements for maintenance and lactating adult goat. 5.0
5. a) What is puberty? Write in details about the factors affecting puberty. 5.0
b) Shortly describe about measures of reproductive performance of sheep and goat. 5.0

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

Chattogram Veterinary and Animal Sciences University

Department of Animal Science and Nutrition

Semester Final Exam of MS in Animal and Poultry Nutrition (January-June/2021)

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. Mr. Karim has five dairy farms in the Chattogram area. He has 500 productive cows in his farm. A total of 30 cows were chosen at random from a single farm. The daily milk yield was recorded from 30 cows. The owner claim that the daily average milk production was 5 liters. Write the algorithm of the test of significance of the owner claim. 8.0
2. A study was to evaluate the effect of calving interval (CI) length on milk production. It was observed that milk production was significantly higher in middle CI than in short CI. Which tool can be used to evaluate this relation? Write its properties and test of the significance. 8.0
3. The daily milk yield was recorded from three farms. The sample observations were not normally distributed. How do you test the significance whether the average daily milk yield was equal or not from three farms? 8.0
4. It is to be expected that the maize concentration increases the milk production. One unit increased maize concentration associated with 0.3 unit increased milk production. Define the terminology of this relationship with its properties. 8.0
5. In a goat farm, a newly prepared feed (3 levels of feed) was given to observe weight gain over time. According to breed, the goats were sorted into three groups. The data were normally distributed. Write the test of significance whether the mean weight gain was different or not according to breed. 8.0
6. What is sampling? What are the criteria of a good sample? Write down the different types of probability sampling. Briefly describe the systematic sampling design. 8.0
7. Briefly describe the McNemar test. How does it differ from chisquare test? 8.0

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) Describe the indirect methods of nutrient digestibility determination with their advantages and disadvantages. 5.00
- b) How can you measure digestibility of Total mixed ration (TMR) in a conventional way? 5.00
2. a) What do you mean by microbial protein? How can you estimate the microbial protein production? 5.00
- b) Describe the procedure of VFA estimation from rumen fluid. 5.00
3. a) What is identification and prioritization of a research problem? 2.00
- b) Describe the basic steps of conducting nutritional research. 8.00
4. How can you determine the amount of forages intake by your grazing herd? 10.00
5. Write short note: Any **ONE** 10.00
 - a) Different cannulae and markers to partitioning the digestive function of a ruminant
 - b) Techniques for nutrient intake estimation of cattle.

Chittagong Veterinary and Animal Sciences University

Department of Animal Sciences and Animal Nutrition

M.S. in Animal and Poultry Nutrition

Semester(Janu-June) final examination-2021

Sub: Feed Biotechnology (T)

Full marks-40

Answer any four questions from the following

1. a) What do you mean by feed biotechnology? Describe about the scope of feed biotechnology in livestock production. 5
b) Mention the name of feed biotech products available in the market with their functions. 5
2. a) What is protein concentrate? Write down the name of some protein concentrate available in the market with a general composition. 5
b) Describe about the production procedure of protein concentrate. 5
3. a) What do you mean by Vitamin mineral premix? Describe about the production procedure of vitamin mineral premix. 5
b) Write down the name of water soluble and fat soluble vitamin premix available in the market with composition. 5
4. a) Define probiotic, Prebiotic, enzyme, toxin binder and pellet binder. Mention the name of those product available in the market with their composition. 5
b) Describe about the probiotic production procedure. 5
5. a) What do you know about the nutritional plant available in Bangladesh. 5
b) Describe about the five nutritional plant with their functions. 5

MS in Animal and Poultry Nutrition
Final Examination January to June Semester/2021
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)

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|----|---------------------------------|---|------------|
| 1. | a. | Define pellet feed and mash feed. Briefly discuss the steps for making Pellet in a feed mill. | 4.0 |
| | b. | Discuss the factors that affect pellet quality. | 6.0 |
| 2. | a. | Discus briefly about two grain and three roughage processing methods. | 4.0 |
| | b. | Indicate the chemical changes in feed during processing of grain, and discuss their effect upon feed quality | 6.0 |
| 3. | a. | List the handling and conveying equipment required for run a modern feed mill. Mention the characteristics of selection of Bucket elevator and screw Conveyors. | 5.0 |
| | b. | Indicate the characteristics of selection and purchase of raw materials. | 5.0 |
| 4. | a. | Discuss the methods of assessing Energy and digestibility of feed | 4.0 |
| | b. | How will you evaluate the feed in physical method? Indicate the common adulterants and toxin in Maize, Rice, Soybean, Fishmeal and DCP. | 6.0 |
| 5. | Write short notes on (Any Four) | | 2.5x4 = 10 |
| | a. | Coating of Vitamin | |
| | b. | Maintenance of extruder | |
| | c. | Vitamin estimation | |
| | d. | Grinder – Hammer Mill | |
| | e. | Pellet cooler | |

Department of Animal Science and Nutrition
Chattogram Veterinary and Animal Sciences University
MS in Animal and Poultry Nutrition
Semester Final Examination (January-June 2021)
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. There is no way to consider fragmented answers!

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 drawbacks of NIR while deemed essential for the unconventional feeds available in Bangladesh? 10.0
2. What is the best method for tracing the critical quantity of metal components in an unknown solution? Despite spectrophotometric techniques why has atomic absorption spectroscopy been evolved in the field of nutrition studies? What are the principle, merits and demerits of this technique? 10.0
3. What are the implications of *in vitro* Menke's gas technique in 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. Why dacron bag technique is neither an *in vivo* nor an *in vitro* 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 CVASU? 10.0
5. What are the implications of bomb calorimetry in nutrition studies? What are the available bomb calorimetry and how they are different in principle? How should you evaluate rice straw using bomb calorimetry? 10.0

MS in Animal and Poultry Nutrition
Final Examination January to June Semester/2021
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 malabsorption. Mention the Etiology and Pathophysiology, clinical findings, diagnosis, treatment and prevention of malabsorption. 5.0
 - b. Indicate the supportive clinical tests, treatment and prevention of Milk fever and Retained Placenta. 5.0
2.
 - a. What do you mean by malnutrition? Indicate the major causes, remedies and preventive measure of Malnutrition in ruminant. 8.0
 - b. List the possible problems associated due to overfeeding and under feeding of sheep and Goat. 2.0
3. Mention the supportive clinical tests, treatment and prevention of Off feed problem, Infertility, White Muscle Disease and Abortions. 10.0
4.
 - a. List the common vitamin deficiency diseases/disorder of Ruminants and indicate their possible prevention. 5.0
 - b. What do you mean by Therapeutic Nutrition? Write down the feeding system of sick dog and cat. 5.0
5. Write short notes on (Any Four) 2.5x4 = 10
 - a. Cystic Ovaries.
 - b. Laminitis.
 - c. Obesity of dog and cat.
 - d. Lactational Ketosis in goat.
 - e. Paternal nutrition of cattle.