Department of Animal Science and Nutrition
Chittagong Veterinary and Animal Sciences University
MS in Animal and Poultry Nutrition
Semester Final Examination (January-June 2019)

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. Is Near Infra Red Spectroscopy (NIRS) a hypothetical dream or a real breakthrough in the history of animal nutrition? Should we replace it with traditional wet chemistry? What are the calibration drawbacks of NIR compared to traditional wet chemistry and how do you think to resolve them? 10.0

2. What is the best method for tracing ultra critical quantity of analyte in the unknown solutions? Despite spectrophotometric techniques, why has atomic absorption spectroscopy been evolved in the field of feed industry? 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 research? How should you proceed to estimate degradability of organic matter (DOM) for dried German grass in 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. Is bomb calorimetry inevitable for modern nutrition research? What are the available different types of bomb calorimetry and what are their bottlenecks? How would you evaluate sorghum hay using bomb calorimetry? 10.0

MS in Animal and Poultry Nutrition Final Examination

January to June Semester 2019

Subject: **Feed Biotechnology (FBT - 601)**

Total Marks: 40, Time: 2 hours

Answer **any FOUR (04)** from the following questions ..... (4 x 10) = 40

1. a) What is Feed Biotechnology? Briefly discuss the molecular techniques used in Animal Feed Biotechnology? 5

   b) Briefly discuss the recombinant DNA technique used in GM Feed. 5

   5

2. a) What is GMO? Briefly discuss the chronological steps used for the preparation of GM food. 5

   b) Briefly make critics on GMO and the techniques. 5

   5

3. a) Define toxin, aflatoxin, toxin binder, mould and mould inhibitor. 5

   b) Briefly discuss about the mould inhibitor and toxin binder with their uses in animal feed industry. 5

   5

4. a) What is an herb? Write short notes on Herbal plants in used in animal feed biotechnology. 5

   b) Write short notes on protein concentrate with its preparation flow chart. 5

   5

5. a) What are probiotics and prebiotics? What are the organisms used in preparing probiotics? 5

   b) Briefly discuss the mode of action of probiotics and prebiotics in animal body. 5

Chittagong Veterinary and Animal Sciences University
Department of Animal Science and Nutrition
MS in Animal and Poultry Nutrition
Semester Final Examination (January-June) 2019
Subject: Nutrition Studies and Research
Course Code: NSR-601

Total Marks: 40 **Total Time: 2 hours**

Answer to the following questions (**any four**):

1. a) What is marker? Mention the name and characteristics of markers that can use in digestibility trial. 5.0
   b) Differentiate between *in vitro* and *in vivo* techniques of digestibility trial. State briefly about the factors affecting digestibility. 5.0
2. a) Stepwise discuss the method of determination of herbage intake by grazing animals. 5.0
   b) Differentiate between Nylon bag and Menke's gas production techniques. 5.0
3. a) What do you mean by rumen liquor and microbial body protein? Illustrate the flow diagram for the production of microbial protein in the rumen. 5.0
   b) Write down the methods of data collection and interpretation of a set research. 5.0
4. a) Diagrammatically show the end products of carbohydrate and protein digestion in the rumen. Write down the features of different VFAs in the rumen. 5.0
   b) Shortly describe about the methods of estimating microbial protein synthesis in the rumen by colorimetric technique. 5.0
5. a) How can you estimate the VFAs in the rumen? Graphically represent the VFAs production using different feed ingredients in rumen. 5.0
   b) Mention the important fields or topics of research that you think priority basis in your field of animal or poultry nutrition. Diagrammatically show the experimental layout for completely randomized design (CRD) of experiment consisting of four treatments consisting of 4 replications and 10 birds in each replication. 5.0

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MS in Animal and Poultry Nutrition
Final Examination January to June Semester/2019
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?	4.0
	b.	Define pellet feed and mash feed. Briefly discuss the steps for making Pellet in a feed mill.	6.0
2.	a.	Mention the different feed processing methods.	4.0
	b.	Indicate the different physical and chemical changes in feed during differing processing, and their effect on nutrient utilization.	6.0
3.	a.	List the handling and conveying equipment required for run a modern feed mill.	5.0
	b.	Indicate the function of mixer and pellet cooler and mention the factors required for selection of these two equipment.	5.0
4.	a.	Indicate the characteristics of selection and purchase of raw materials.	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. Urea Molasses Block
c. Selection of Bucket elevator and screw Conveyors.
d. Calcium estimation
e. Grinder – Hammer Mill

MS in Animal and Poultry Nutrition
Final Examination January to June Semester/2019
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. List the common vitamin deficiency diseases/disorder of Ruminants and indicate their possible prevention. 5.0

2. Mention the supportive clinical tests, treatment and prevention of Milk fever, off feed problem, infertility and Displaced Abomasum. 10.0

3. List the possible problems associated due to overfeeding and under feeding of sheep/Goat and mention the diagnosis, treatment and prevention of Lactic acidosis, Hypomagnesemia and Lactational Ketosis in goat. 10.0

4. a. Indicate the supportive clinical tests, treatment and prevention of Retained Placenta and Cystic Ovaries. 5.0

   b. Write down the feeding system of sick dog and cat. 5.0

5. Write short notes on (Any Four) 2.5x4 = 10

   a. Abortions
   b. Malnutrition in non-ruminants
   c. Paternal Nutrition in Goat
   d. Laminitis
   e. Mal absorption

January to June Semester 2019 Final Examination
Department of Animal Science and Nutrition
MS in Animal and Poultry Nutrition
Chittagong Veterinary and Animal Sciences University
Course Title: Applied Biostatistics
Code: ABS 601

Answer any **4** from the followings. Marks are shown in the right margin in each question.

1. a) Differentiate between regression and correlation. Explain Spearman Rank Correlation. 5

b) A study was made to determine the relation between age and weight of chickens of a poultry farm: 5

Weight (in gm)	100	105	120	140	150	160
Age (in days)	5	6	7	8	9	10

Find the strength or intensity between age and weight of chickens.

2. a)Identify treatment. Block, experimental unit and yield with a practical example in your field. 4

b) 3 different kinds of hormone were applied to 4 blocks of chickens. Are the treatment and block statistically significant? (use 5% level of significance) 6

Block/Treatment	1	2	3
1	1.2	1.5	1.4
2	1.8	1.6	1.4
3	1.3	1.7	1.6
4	1.2	1.5	1.8

3. a) Derive the formula to test a population mean with a specific value in case of large samples when population variance is given. 4

b) Two groups of 20 cows were fed two different rations A and B for 6 months to calculate if there is any significant difference in the lactation milk yield at 5 % level of significance. After six months the results are: 6

Particulars	Ration A	Ration B
Mean	4.5	5.6
SD	0.5	0.35

4. a) Define Normal test. Differentiate between Z and t test. 4

b) A certain drug is effective in curing cold. In an experiment on 500 farms owners suffering from cold, half of them were given sugar pills and half of them were given drugs. The reactions of the patients are recorded as: 6

	Helped	Harmed	No Effect
Sugar pills	130	40	80
Drugs	150	30	70

5. a) Explain errors in hypothesis. What is power of test? 4

b) 5 different rations were given to cows of a dairy farm to see if there is any significant difference in weight gain of cows at 5% level of significance. After 1 month the records are: 6

Ration 1	Ration 2	Ration 3	Ration 4	Ration 5
5	5	1	3	5
3	3	2	3	6
4	6	1.5	4	4
2	4	2	5	5
	5		2	

Chittagong Veterinary and Animal Sciences University

Department of Agricultural Economics and Social Science

M.S. in Agricultural Economics

July-December Semester final Exam, 2019

Course Title: Research Methodology (Theory)

Course code: REM-602

Total Marks: 40; Time: 2 hours

Answer any 4 (four) question from the followings.

1. Define research and research methodology. Discuss the scope of research methodology in the field of Veterinary science. **7**

2. (a) Define sample and sampling. Why sampling is essential in research? Classify sampling methods. **5**

(b) Briefly discuss the sampling techniques for research in the field of biological sciences. **5**

3. Define research design. Briefly discuss the different types of study design with their advantages and limitations for doing research in disease control measures. **10**

4. Define qualitative and quantitative research. Write the key differences between a focus group interview and a depth interview. Prepare a focus group outline. **10**

5. Write short notes on (Any 2 from the followings): **4**

(i) Epidemiologic Study Designs; (ii) PRRA; (iii) Sampling error; iv) Prepare a questionnaire for conducting a suitable research in the field of animal disease control measures.

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MS (Physiology) January-June semester Final Examination-2018
Chittagong Veterinary and Animal Sciences University
Faculty of Veterinary Medicine
Department of Physiology, Biochemistry and Pharmacology
Course title: Immunophysiology
Course Code: IPH-601
Total Marks: 40

Answer any 8 questions and figure in the right margin indicate full marks

1	What does the lymphatic and immune system do?	5
2	How do T cells recognize an antigen?	5
3	Describe the Immuno-regulation by covalent antigen-antibody complexes	5
4	Describe the humoral immunity against intracellular pathogens	5
5	What is the complement system and how does it work?	5
6	What is the classical pathway of the complement system?	5
7	What are some diseases that weaken the immune system?	5
8	Describe the Structure and function of major histocompatibility complex (MHC) class I antigens	5
9	What is autoimmunity in the body?	5
10	What foods to avoid if you have autoimmune disease?	5

Chittagong Veterinary and Animal Sciences University
Department of Physiology, Biochemistry and Pharmacology

MS in Physiology Final Examination 2018

Semester: January-June

Course Title: Endocrine and Reproductive Physiology (Theory)

Course Code: ERP-601

Total marks: 40, Time: 2 hours

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

1. a. List the hormones secrete from gonad. How do you determine the cow and doe are in estrus? 5
   b. Define reflex ovulation with example. Briefly describe the graphical illustration of hormone during estrus cycle of a cow. 5

2. a. What are the precursors of steroid hormone? Write down the physiological role of thyroxin hormone. 5
   b. Classify hormone with example? Write down the mode of action of steroid hormone. 5

3. a. Why cortisol is called stress hormone. Write down the functions of catecholamine. 5
   b. What are the hormones of calcium homeostasis? Write the functions of PTH and calcitonin. 5

4. a. How do testes regulate temperature for spermatogenesis? What are the physiological role of accessory sex organ of horse. 5
   b. What are the functions of primary sex organ? Write down the composition of semen 5

5. a. List the hormones involved in mammary gland development? Briefly describe milk let down in cow. 5
   b. Classify placenta. What are the causes of retained placenta? How will you manage retained placenta in cow? 5

Chittagong Veterinary and Animal Sciences University
Department of Physiology, Biochemistry and Pharmacology

MS in Physiology Final Examination 2018

Semester: January-June

Course Title: Avian Physiology (Theory)

Course Code: AVP-601

Total marks: 40, Time: 2 hours

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

1. a. Differentiate the followings; $3\times2=6$

   i. Mammalian and avian respiratory system
   ii. Mammalian and aviandigestive system
   iii. Mammalian and avianurinary system

   b. List the parts of oviduct. Write down the mechanism of egg formation in White Leg horn? 4

2. a. List the mechanical factors of digestion? Enumerate the proteolytic, amylolytic and lipolytic enzymes found in the gastrointestinal tract. 5
   b. What are the parts of avian digestive system? Briefly describe the protein digestion and absorption in chicken. 5

3. a. List the air sac found in a chicken? Write the physiological role of air sac in respiration of poultry. 5
   b. Write the compositions of urine of birds. Briefly describe the mechanism of urine formation in chicken. 5

4. a. What are the causes of panting? How does birds regulate body temperature in extreme hot weather? 5
   b. Briefly discuss the regulation of erythrocyte production in birds. 5

5. a. What is the role of heparin in body? Write down the defensive properties of leukocyte in birds. 5
   b. Why is heart rate higher in birds? Briefly discuss the regulation of heart in birds. 5

MS (Physiology) January-June semester Final Examination-2018
Chittagong Veterinary and Animal Sciences University
Faculty of Veterinary Medicine
Department of Physiology, Biochemistry and Pharmacology
Course title: Molecular Cell Physiology
Course Code: MCP-601
Total Marks: 40

Answer any 8 questions and figure in the right margin indicate full marks

1	Why do cells communicate with each other? What happens when cell communication goes wrong?	5
2	What is the purpose of a checkpoint in the cell cycle? What is a cellular communication system?	5
3	Describe signaling between cells of one organism and multiple organisms	5
4	Describe the cell signaling pathway within a typical cell	5
5	Why is the central dogma of biology important?	5
6	Genes specify functional products (such as proteins)- justify this statement	5
7	Describe the cytoskeleton and its role in intracellular transportation	5
8	Describe signal transduction mechanism in cellular communication	5
9	Describe the methods and techniques in molecular biology	5
10	Enumerate the basic processes governing the intermediary metabolism	5

Chittagong Veterinary and Animal Sciences University

Department of Physiology, Biochemistry & Pharmacology

MS (Pharmacology)

Sub: Phytotoxicology (PTL-601)

Total Marks: 40 Time: 2 hours

Answer the following questions (Any four): **4 ×10 = 40**

1. a. What is poisonous plant? Why poisons in plants?
   b. what are the toxic principle of plant? Enumerate ten toxic principles with their plants.
   c. What is the general treatment for the plant toxicity?
2. a. What is photosensitization? What plants responsible for photosensitization?
   b. How plant produce photosensitization?
   c. How you diagnose, treat and manage the case of photosensitization?
3. a. What plants affect CNS? Name some mushroom causing CNS signs with treatment.
   b. What are the factors affect the toxicity? Name some oxalate containing plant.
   c. How plant having oxalic acid do harm to animal body?
4. a. What are the toxic principle of Datura, Strychnine, Oleander, Rati, Varenda poisoing?
   b. What is lathyrism? How neurolathyrism develop with its signs of toxicity.
   c. Write down toxic principle, clinical sign, treatment of sorghum poisoning.
5. a. What are the diagnostic spot test for Nitrite, Cyanide and Oxalate poisoning?
   b. What plant causes carcinogenic and tera togenic effect with their treatment.
   c. What plants are responsible for cyanide toxicity? What is the mode of action of toxicity with treatment of it.
6. **Short note (any four):**
   a) Castor bean poisoning; b) Kalmi poisoning; c) Illicite plant poisoning; d) Alkali disease; e) Marijuana; f) Tobacco; g) Cardioactive glycoside poisoning.