

**M.S. in Animal Science Semester Final Examination**

July to December Semester 2017

Sub: Biotechnology in Animal Science

Course Code: BAS-602

Full Marks: 40; Time: 2 Hours

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

1. a) Describe about the use of biotechnological tools 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) Write down the production procedure of fermented TMR. 5
3. a) Mention the methods of embryo transfer technology. 5  
b) Describe about the sexing of embryo in the field of animal science. 5
4. a) Describe about the production procedure of enzyme by fermentation method. 5  
b) Write down the production procedure of vaccine. 5
5. a) Describe about the cell culture regarding animal science. 5  
b) Write down about the commercial scale production of animal cells. 5

Department of Animal Science and Nutrition  
Chittagong Veterinary and Animal Sciences University  
MS in Animal Science  
Semester Final Examination (July-December 2017)  
**Course Title: Meat and Meat Products Technology (Theory)**  
Course code: MPT-602, Full marks: 40, Time: 2 hours

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

1. (a) Make a strategic plan to implement a “safe meat production project” in Bangladesh. 5.0  
(b) Describe a standard “growth curve” of a bull. Based on the growth curve suggest an appropriate age and period of profitable beef fattening. 5.0
2. (a) ‘Although red meat contain higher amount of saturated fat and cholesterol but it acquired a unique position in human nutrition’. Explain the statement with suitable logics and explanations. 5.0  
(b) A person is aware about health. He knows that red meat consumption leads to cardiovascular disease. Recently he noticed the ‘carcinogenic effect of red meat’ in a health magazine. He comes to you with the confusion, whether he will continue red meat consumption or not. Now provide your opinion and suggest him a standard guideline for red meat and fat consumption. 5.0
3. (a) What do you mean by non-meat ingredients? Classify meat products according to processing technology applied with examples in each case. 5.0  
(b) Write down the preparation procedure of beef sausage with standard recipe. 5.0
4. (a) Briefly discuss how the meat production, processing and consumption strategies have been changed over time. 5.0  
(b) Although meat tenderization is a natural process how you can influence the rate of tenderization? 5.0
5. (a) What do you mean by slaughterhouse byproducts? How the amount of slaughterhouse byproducts can be varied between developing and developed countries? 3.0  
(b) Briefly discuss the stages of cleaning and disinfection procedure of a modern meat plant. 7.0

**Department of Animal Science and Nutrition**  
**MS in Animal Science**  
**Semester Final Examination 2017**  
**Semester: July-December 2017**  
**Subject: Animal by-products and waste management (AWM-602)**

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

**Full marks: 40**

**Time: 2 hour**

1. Define eutrophication. Explain the causes, impact and control of eutrophication. 8.0
2. What are the different possible environmental pollutions may occur? Describe the causes, effects and prevention of air pollution. 8.0
3. Briefly describe about the hygiene and disposal of farm waste by reducing environmental hazards. 8.0
4. Write down the importance and demerits of animal by-products. Shortly describe about the functional utilization of animal by-products. 8.0
5. Shortly describe about protein and fat content of hides and skins with their functional effect on finished leather. 8.0
6. Define Bangladesh environment protection act 1995. Mention the declaration of ecologically critical areas. Explain direct or indirect damage to the eco-system and discharge of excess environmental pollutants of this act. 8.0

-----Good luck-----

# Chittagong Veterinary and Animal Sciences University (CVASU)

Department of Animal Science and Nutrition

MS in Animal Science

Second Semester (Jul to Dec) Final Exam 2017

Course Title: Livestock Business Management

Course Code: LBM-602

Total Marks: 40, Time: 2.00 Hours

## Instructions:

1. Answers should be *specific and brief*.
2. All parts of a single question need to be answered without breaking the sequence.

## Mandatory Part (Marks: 10)

Answering to these questions is mandatory:

1) A) Show the general skills you need to develop to be a good manager.	3
B) Show the basic Farm-Business Decisions you need to deal with as a Farm Owner.	5
C) Show the management process.	2

## Selective Part (Marks: 30)

Please answer to any 3 (three) from the below questions:

2) A) Identify potential drawbacks to planning. B) Outline the steps in the strategic management process. C) 'We cannot predict the future. So there is no point of doing Plan'- Do you agree? Justify your position.	3 4 3
3) Suppose you are working for Marketing of CP "Ready to Cook" food. A) Propose some ideas on how to increase the Value of your product. B) Develop a chain to distribute your product to the consumers.	5 5
4) A) Demonstrate the steps in organizing. B) Summarize the importance of organizing. C) Mention the basic elements of organizing.	4 3 3
5) A) Explain the factors you will consider while hiring a personnel. B) Mention the content titles of a typical Business Plan. C) How do you calculate ROI? You have two Strategic Business Units (SBU). First year calculation says one is giving 25% ROI and another one is giving 15% ROI. Which one is better and why?	3 4 3
6) A) Show the basic communication model and interpret it. B) Explain the importance of Business Communication and provide examples. C) A regional sales manager suspected that one of his customers was having some financial troubles. However, he was reluctant to mention it to his boss, because he felt that he could be wrong. He kept quiet for several months, continuing to take large orders from this customer and hoping that this customer could recover from the troubles. Eventually, the customer went bankrupt and defaulted on the payment of several large bills. What went wrong? How would you handle the situation differently?	3 3 4

MS in Animal Science Final Examination  
July to December Semester 2017  
Subject: **Wildlife Conservation and Environment (WCE-602)**  
Total Marks: 40. Time: 02 hours

Answer any **FOUR (04)** from the following questions. Figures in the right margin indicate full marks.

1. a) Define ecological succession. Discuss the importance of biodiversity conservation? 5  
b) Differentiate conservation from preservation. Discuss the ecosystem approach of biodiversity conservation. 5
2. a) Explain threatened animals. Discuss the criteria adopted by IUCN Bangladesh regarding threatened mammals. 5  
b) What is IUCN? Discuss the Bangladesh national categories of threatened mammals. 5
3. a) How the natural habitat of wildlife is disturbed? How can we manage it? 5  
b) Discuss the importance and options for wildlife management. 5
4. a) Define biodiversity. Discuss the multiple values of biodiversity adapted by Mukul in 2007. 5  
b) What is population dynamics? Briefly discuss the ways of conservation of wildlife. 5
5. a) What do you mean by 'zoo education and research'? Explain captive breeding. 5  
b) What is biodiversity depletion? Explain some major reasons behind biodiversity depletion in Bangladesh. 5
6. Write short notes on (any four) 2×4= 10
  - a) Protected areas of Bangladesh
  - b) In situ conservation of wildlife
  - c) Environmental factors of biodiversity
  - d) International laws for wildlife conservation

**Department of Animal Science & Animal Nutrition**  
**MS in Animal and Poultry Nutrition**  
**Semester Final Examination 2017**  
**Semester: July-December 2017**  
**Subject: Avian Nutrition**  
**Course code: AVN-602**

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

**Total marks: 40**

**Time: 2.0 hours**

1. Is Mycotoxins a common thread for poultry ration? If yes, explain shortly. State 8.0  
the deleterious effect of plant toxin with their possible remedies for poultry ration.
2. Shortly describe about the diet specification and formulation for laying hen. List 8.0  
the possible factors need to be considered minimizing heat stress in laying hen.
3. "Soybean meal is an essential component in poultry diet" justify yourself. Briefly 8.0  
describe about the importance and potential problem of using corn in poultry diet.
4. Write down the importance and feasibility of turkey and duck rearing in 8.0  
Bangladesh. Shortly describe about the diet and nutritional specification for turkey  
breeders.
5. State the importance of breeder pullet feeding program. Describe about the 8.0  
qualitative and quantitative feed restriction for breeder pullet.
6. List out the different feed additives used in poultry feed industry with their specific 8.0  
functions. Describe shortly about "flavoring agents and odor control" of poultry  
diet.

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

**M.S. in Animal and Poultry Nutrition Semester Final Examination**

July to December Semester 2017

Sub: Animal Products in Human Nutrition

Course Code: APN-602

Full Marks: 40; Time: 2 Hours

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

1. a) Describe about the animal products in human nutrition. 5  
b) Write down the status of Animal products present and future. 5
2. a) Describe about the meat and meat products for human consumption. 5  
b) Write down the role of meat and meat product with their bad effect. 5
3. a) Mention about the egg products for human consumption. 5  
b) Describe about the importance of egg and egg products with lethal effect. 5
4. a) Describe about the essential amino acids for human health. 5  
b) Write down about the saturated and unsaturated fatty acids for human. 5
5. a) Describe about residual effects of antibiotics on human health. 5  
b) Write down about the phospholipid in brain development. 5

**M.S. in Animal and Poultry Nutrition Semester Final Examination**

**July to December Semester 2017**

**Sub: Ruminant Nutrition**

**Course Code: RNT-602**

**Full Marks: 40; Time: 2 Hours**

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

1. a) Describe about the rumen structure and physiology. 5  
b) Write down the dynamics of rumen microbes. 5
2. a) Describe about the movements of rumen. 5  
b) Write down the mixing of digesta in the ruminant stomach. 5
3. a) Mention about the nutrition of rumen microbes. 5  
b) Describe about the biochemistry of ruminant stomach. 5
4. a) Describe about the Protein source feed of ruminant animal. 5  
b) Write down the degradation of crude protein in ruminant animal. 5
5. a) Describe about the estimations of ME, RDP and UDP for ruminants. 5  
b) Write down about the dynamics of NPN utilization in ruminants. 5



MS in Animal and Poultry Nutrition Final Examination  
July to December Semester 2017  
Subject: **Forage production and grassland management (FGM-602)**  
Total Marks: 40. Time: 02 hours

Answer any **FOUR (04)** from the following questions. Figures in the right margin indicate full marks.

1. a) What is grassland? Briefly discuss the types of grassland available over the globe. 5  
b) Discuss the factors which affect the nutritional value of grassland. 5
2. a) Explain Pasture? Discuss the types of grazing system for better pasture management. 5  
b) Discuss intercultural operation? List them to be performed in a Napier plot at your campus. 5
3. a) Explain the status of fodder for dairy cattle in Bangladesh with their problems and prospects. 5  
b) Illustrate forage. What steps to be performed to increase forage and grass cultivation? 5
4. a) Explain the ways farmers can preserve and store surplus forages emphasizing on the use of organic acid. 5  
b) Illustrate the possible ways of loss of nutrients in hay making. 5
5. a) Briefly discuss the permanent pasture, irrigation pasture and grassland farming. 5  
b) Define NCFR. List the potential sources of NCFR with their importance in livestock feeding. 5
6. Write short notes on (any four) 2×4= 10
  - a) High yielding grasses in Chittagong
  - b) Herbs as a cattle feed
  - c) Protein-Energy ratio in dairy cattle feeding
  - d) Antinutritional factors in forages

**Chittagong Veterinary and Animal Sciences University**

M S in Animal and Poultry Nutrition

July-December Semester Final Examination 2017

**Course title: Nutrition and Reproduction**

Course Code: NRP-602

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) Distinguish between Nutrition and Reproduction. Draw neat diagram of cow's reproductive organ and mention the role of nutrients for its development. **8**
- b) Calculate nutritional requirement of 120 days pregnant cow having 380 kg live weight and producing 16 liter milk daily. **8**
- c) List the feeding standard those are usually used for cows ration formulation. Write down the advantages and disadvantages of Thumb rule and AFRC method. **4**
2. a) What is trait? List the functional and biological timeframe traits of cow. **4**
- b) Write how you will analyze the dairy herd fertility under cooperative dairying conditions of Bangladesh? **8**
- c) Define useful life of a bull. Describe the management of bull during breeding period. **4**
3. a) What do you mean by the term value of milk? Briefly write the causes of variation in the yield and composition of milk from cow. **8**
- b) How will you examine the breeding soundness of a bull? Narrate a ration for 4 yrs old bull having 700 kg live weight and dairy live weight gain is 150g and which are using semen collection twice per week and ejaculate volume is 10 ml. **12**

Department of Animal Science and Nutrition  
Chittagong Veterinary and Animal Sciences University  
MS in Animal and Poultry Nutrition  
Semester Final Examination (July-December' 2017)  
**Course Title: Lab. Pet and Wild Animal Nutrition (Theory)**  
Course code: LPW-602, Full marks: 40, Time: 2 hours

*(Figures in the right margin indicate full marks. Answer any four (4) of the following questions. All questions must be answered chronologically. Fragmented answer will not be taken into consideration)*

1. (a) Is it necessary to supply any special vitamin in diet of guinea pig? 1.0  
(b) "Kitchen waste may be a potential source in rabbit diet by replacing roughages" 4.0  
explain this fact from your own point of view.  
(c) Briefly describe the feeding management of rabbit in environmentally 5.0  
controlled house.
2. (a) How much fiber is necessary in ration of dog? 2.0  
(b) Are there any differences exist between dog and cat nutrition? If yes, then 4.0  
explain on the basis of different nutritional facts.  
(c) Shortly discuss about the digestive physiology of dog. 4.0
3. (a) Write about the different kinds of additives used in pet foods. 3.0  
(b) Write a short note on post operative diet. 3.0  
(c) Discuss the nutritional management that should be undertaken for animals in 4.0  
adverse environmental conditions.
4. (a) Categorize animals according to their feed habits. 2.0  
(b) Describe the characters to be followed during formulation of a balanced ration 4.0  
for captive animals.  
(c) Make a feed chart of the following animals mentioning their dietary categories: 4.0  
Rhinoceros, Hippopotamus, Giraffe, Monkey
5. (a) Draw a food pyramid for wild birds. 2.0  
(b) Make a clear concept on wild bird nutrition following the basic principles. 4.0  
(c) Briefly discuss about the different nutritional disorders observed in wild birds. 4.0

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

1. a) Differentiate breeding goal from breeding scheme. List the breeding scheme for sire selection. 3
- b) State the current dairy cattle improvement policy in Bangladesh. Mention the drawbacks and prospects of this policy. 7
- c) What is breeding design? How will you design a structured genetic improvement programme for dairy development for Bangladesh. 10
  
2. a) What is breeding objective)? How will you develop the breeding objective from a dairy herd consisting of 10 cows having average live weight is 300 kg and each cow produces 2600 liter milk and 108 kg fat per lactation. Per unit price for milk, fat and meat is Taka 50/=, 600/= and 180/= respectively. 12
- b) What is mixed model equation? Write down its application for estimating BLUP breeding values. 4
- c) What do you mean by genetic gain? List the causes of genetic gains of milk from cow. Estimate the genetic gains for milk yield using the bull to cow path way of selection from a hypothetical dairy herd. 4
  
3. In an attempt to breed ostriches that will provide a greater quantity of meat and quality of leather 25 years from now, the OYSRAC company decided to develop their own bird selection programme. Their economists forecast that the net present value of an extra unit of leather quality will be \$60 white the value of an extra kilogram of meat will be worth \$7. Given the difficulty of measuring both of these two traits directly, OYSRAC geneticists decided to use skin pliability as an indirect predictor of leather quality and live-weight as an indirect predictor of meat quantity, both measured at 2 years of age.

	Std. dev.	Leather	Meat	Pliability	Live-weight
Leather (units)	0.33	<b>0.35</b>	-0.50	0.50	-0.30
Meat (kg)	3.20	-0.30	<b>0.46</b>	0	0.22
Pliability (mm/cm)	16.5	0.65	-0.10	<b>0.20</b>	0.10
Live-weight (kg)	3.76	-0.40	0.50	-0.20	<b>0.30</b>

Std.dev is the phenotypic standard deviation. Heritabilities are on the diagonal, genetic correlations below the diagonal and phenotypic correlations above the diagonal.

Assume that selection of new parents is based on a single record of their own performance. Given the above information:

- a) State the selection objective and selection index in terms of linear equation. 3
- b) Derive the index weighting factors using Best Linear equation. 14
- c) One particular bird has a pliability deviation of 14 and a live-weight deviation of -2.0 what is the aggregate genetic merit. 3