

**Chittagong Veterinary and Animal Sciences University**

**Dept. of Dairy and Poultry Science**

**Final Examination January-June Semester/2019**

**MS in Dairy Science**

**Course: Quality Control of Dairy Products**

**Course Code: QCD-601, Total Marks: 40, Time: 2 hour**

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

1. a) How will you collect sample for chemical and microbiological evaluation after production of a batch of milk powder in a factory. 03  
b) What are the factors influencing the keeping quality of milk powder? 03  
c) What are the factors influencing the rate of milk-fat oxidation during storage of milk powder. 04
2. a) List the score of different parameters of butter for evaluating the quality. 02  
b) What are the requirements for high grade butter? 02  
c) What are the causes and prevention of sour, alkaline, bitter, flat, oxidized, rancid and cheesy flavor in butter? 06
3. a) 10000 kg milk of 4.6 percent fat is available in your factory. How much cream of 34 percent must be removed so that tests 3.5 percent fat? 05  
b) 100 kg cream of 30% fat is available in your factory to be mixed with 45% cream to prepare a mixture of 35% cream. Determine amount of 45% cream. 05
4. a) List the score of different parameters of cheese for evaluating the quality. 02  
b) What should be the pre-requisites of good quality packaging material of cheese? 02  
c) List the modern packaging materials and forms of cheese. Enlist the merits and demerits of film packaging of cheese. 06
5. a) Mention the BSTI standard for pasteurized milk and information should be appeared legibly on each packet. 03  
b) Mention the BSTI standard for plain and composite ice-cream. 03  
c) What are the pre-requisite of BSTI for using fruits in ice-cream? 04

**Chittagong Veterinary and Animal Sciences University**

**Dept. of Dairy and Poultry Science**

**Final Examination January-June Semester/2019**

**MS in Dairy Science**

**Course: Dairy Technology**

**Course Code: DTL-601, Total Marks: 40, Time: 2 hour**

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

1. a) Write the role of milk constituents in condensed milk. 03  
b) Discuss the method of manufacture, packaging and storage of condensed milk. 07
2. a) What are the objectives of production of dried milks? 02  
b) Illustrate the method of manufacture of whole milk powder by spray drying process. 08
3. a) Write the manufacturing procedure of sweet yoghurt. 06  
b) Show the symbiotic relationship of *Streptococcus thermophilus* and *Lactobacillus bulgaricus* in manufacturing process of yoghurt. 04
4. a) Mention the stages those are common in manufacturing all types of cheese making. 02  
b) Illustrate the method of manufacture of Swiss cheese. 08
5. a) Explain the churning theories of cream into butter. 04  
b) Show the manufacturing procedure of butter by a flow diagram with mentioning the salient points. 06

Department of Dairy and Poultry Science  
Chittagong Veterinary and Animal Sciences University

M.S. in Poultry Science

Session: January-June, Final examination 2019,

Course: Poultry Farm Planning and Management

(Answer all questions. All questions are of equal marks)

Full marks: 40

Time: 2 hours

Questions:

1. Describe the considerations in poultry farm planning.
2. Describe requirement of airflow and ventilation in poultry house. Write construction and management of housing of 1000 layer flock.
3. Give a farm plan for 2500 commercial broiler.
4. Write importance of lighting in commercial layer and broiler farm. Describe different systems and management of lighting in layer farm.

MS in Dairy Science Final Examination

January to June Semester 2019

Course Title: **Dairy Nutrition (Code: DNT- 601)**

Total Marks: 40, Time: 2 hours

**Answer any FOUR (04) from the following questions..... (4x10) = 40**

1. a) What do you know about bypass nutrient? Discuss the role of bypass protein in high yielding dairy cows. 5  
b) What is area specific mineral mixture? Do you think it is essential in our country? Justify your answer. 5
2. a) What is Total Mixed Ration (TMR)? Write down the importance of TMR. 5  
b) What is dairy nutrition? Briefly discuss about the feeding approaches of urea to the dairy cattle. 5
3. a) You have an imported feed sample supplied from a custom's house. How could you evaluate the quality of that feed? 5  
b) What are the biotechnological advances occurred in dairy cattle feeding in the developed world? 5
4. a) What is digestibility? How digestion trial differs from metabolism trial? 3  
b) Calculate the DM digestibility of napier grass where feed consumed 15 kg, refusal 1 kg and faeces outgo 6 kg (where DM of grass, refusal feed and faeces were 20%, 22% and 15% accordingly). 7
5. a) What is feeding standard? Discuss the importance of feeding standard in dairy cattle farming? 5  
b) Briefly discuss the partitioning of energy in ruminants. 5

**Chittagong Veterinary and Animal Sciences University**

**MS January-June Semester 2019 Final Examination**

**M. S. in Dairy Science**

**Course Title: Functional Dairy Ingredients (Theory), Course Code: FDI-601**

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

(Figures in the right margin indicate full marks. Answer any **FOUR** questions of which question Number 1 is compulsory)

1. a) What is functional dairy foods. Classify the functional foods. **3**
- b) Briefly describe benefits of bioactive components in milk and dairy products. **3**
- c) Sketch the major biologically active milk components and their functions. **4**
2. a) Illustrate consumer group with varying health status & requirements regarding functional foods. **4**
- b) Illustrate health benefits of functional foods. **3**
- c) "Caseins as source of bioactive peptides"-explain it **3**
3. a) Define probiotics, prebiotics and symbiotic with example. **3**
- b) Briefly describe the health benefits of prebiotics **4**
- c) Give a flow chart for the galactooligosaccharides manufacture **3**
4. a) Enumerate the legislations and relevant regulations situation regarding health claims and functional foods. **2**
- b) Briefly described about the disease reduction risk FOSHU and foods with nutrient function claims. **3**
- c) Enumerate the genomic overview and biological functions of exopolysaccharide biosynthesis in bifidobacterium spp **5**
5. a) Briefly described the immune enhancing ability of milk protein. **3**
- b) Illustrate the mood of action of milk components against cancer. **3**
- c) Illustrate the mechanisms of production of major bioactive peptides from milk proteins **4**
6. Write short notes (**any 4**) on: **2.5 x 4 =10**
  - a. Interactions between gut microbiota and host,
  - b. Role of microbiota in inflammatory bowel disease,
  - c. Enlist the immunomodulation bioactive components in milk and dairy products.
  - d. Exopolysaccharides produced by LAB,
  - e. Relationship between bioactive function and milk components.

**Chittagong Veterinary and Animal Sciences University**  
**MS January-June Semester 2019 Final Examination**  
**M. S. in Dairy Science**  
**Course Title: Dairy Chemistry (Theory), Course Code: DCH-601**  
**Full Marks: 40, Time: 2 Hours**

(Figures in the right margin indicate full marks. Answer any **FOUR** questions of which question Number **1** is compulsory)

- |    |   |  |            |
|----|---|--|------------|
| 1. | a)  | What do you mean by Dairy Chemistry? Write down the importance of Dairy Chemistry. | 3.0        |
|    | b)  | Describe detail composition and structure of milk.                                 | 5.0        |
|    | c)  | Illustrate the importance of milk proteins?  | 2.0        |
| 2. | a)  | Briefly describe both indigenous and exogenous enzymes of milk.                    | 3.0        |
|    | b)  | State one most important enzymes of milk, which related to pasteurization.         | 3.0        |
|    | c)  | Classify the milk protein?   | 4.0        |
| 3. | a)  | Briefly describe the Principles of cream/fat rising.                               | 2.0        |
|    | b)  | Classify the lipid and fatty acid of milk.   | 5.0        |
|    | c)  | Is dairy fat good or bad for you?  | 3.0        |
| 4. | a)  | Briefly describe the chemistry of curd formation during dahi preparation           | 4.0        |
|    | b)  | Illustrate the pathway of lactic acid formation from lactose                       | 4.0        |
|    | c)  | Mechanism of biacetyl formation from fermentation of citric acid.                  | 2.0        |
| 5. | Write short notes :   |  | 2.5 x 4=10 |
|    | a). Chemical aspects of flavour b). Sources of radio active materials in milk products. c).<br>Detection procedure of radio active materials in milk products d). A1 and A2 milk. |  |            |

**Chattogram Veterinary and Animal Sciences University**  
**Department of Dairy and Poultry Science**  
**MS in Poultry Science**  
**January-June Semester, Final Examination, 2019**  
**Sub: Avian Health and Hygiene**  
**Course code: AHH-601**  
**Total marks: 40**  
**Total time: 2 hours**

**Answer any of the five question from below. The mark of each question is indicated in the right-hand side.**

- |    |    |  |   |
|----|----|--|---|
| 1  | a) | Define the flock hygiene. State the importance of flock hygiene.                                   | 3 |
|    | b) | Briefly describe the steps necessary to maintain proper hygiene in a poultry flock.                | 5 |
| 2. | a) | Enlist the different stresses that influence the poultry health.                                   | 1 |
|    | b) | How will you minimize the heat-stress in a layer flock?  | 7 |
| 3. | a) | Enlist the key principles of prevention of poultry disease.  | 1 |
|    | b) | Briefly describe the prevention procedures to control the Coccidiosis in poultry farm.             | 7 |
| 4. | a) | Define gut health. Enlists the component of gut health.  | 3 |
|    | b) | Briefly describe the factors that influence the poultry gut health.                                | 5 |
| 5. | a) | Enlist the wastes that are produced from intensive poultry farm and hatchery.                      | 2 |
|    | b) | State the effective ways to dispose the hatchery waste.  | 6 |
| 6. | a) | Briefly describe the factors that influences the feed intake of poultry?                           | 5 |
|    | b) | How feed intake influences the overall performance and health of poultry?                          | 3 |
| 7. | a) | How can you differentiate a healthy bird from diseased bird through external examination?          | 2 |
|    | b) | Outline an advisory plan in order to prevent and control the occurrence of bird flu in Bangladesh. | 6 |

**Chattogram Veterinary and Animal Sciences University**  
**January-June Semester Final Examination-2019**  
**MS in Poultry Science**  
**Course title: Poultry Breeding**  
**Course Code: PBR 601**  
**Full marks-40.0, Time-2 hr**

Answer any 2 (two) question from the followings. Figure in the right margin indicate full marks.

- 1
  - a) State the term poultry breeding? Illustrate the importances of poultry breeding study in Bangladesh with the goal of poultry improvement? 3.0
  - b) What are mating usually practiced in poultry? Which one is suitable for development of crossbred in Bangladesh? 4.0
  - c) Define genetic parameter in poultry? Predict the best method of estimating heritability for egg production in chicken? 5.0
  - d) CVASU has a vision to establish a nucleus herd for egg production. What are the points should be considered? Explain in details? 8.0
  
- 2
  - a) Explain Genetic correlation, Effective population size and idealized population? 3.0
  - b) What are the assessment criteria of birds for the development of meat type chicken? 5.0
  - c) State Osborne Index? Egg production of 70 weeks pullets is given below. These are offspring's of 3 sire mated with two dams having 4 progeny from a single hatch. Calculate Osborne index of each birds and rank them assuming flock average 248.5 eggs. ( $b_1 = 1.455$  and  $b_2 = 1.745$ ) 12.0

Sire	Dam	Performance of egg production			
		1	2	3	4
Sire 1	1	233	267	248	236
	2	261	250	235	254
Sire 2	1	251	255	253	236
	2	257	239	259	248
Sire 3	1	247	266	257	237
	2	264	230	247	233

- 3
  - a) Describe different theory of modern chicken development? 3.0
  - b) Differentiate between general combining ability and specific combining ability? 3.0
  - c) How will you develop a broiler strain using breeding tools and techniques? 8.0
  - d) Write down short note on 6.0
    - i) Family selection
    - ii) Reciprocal recurrent selection



**Chattogram Veterinary and Animal Sciences University**  
**MS in Poultry Science final Examination**  
**Semester: January–June, 2019**  
**Subject: Ducks & Specialized Fowl Production-Theory**  
**Course Title: DSF-601; Total marks: 40; Time: 2 hours**

*Answer any five questions of the following including 2;  
Figures in the right margin indicate full marks*

1. Describe the selection strategies and production systems for increasing duck meat production in the world 8
2. What is integrated farming? State a strategy that you could follow to do proper utilization of space and poultry wastages to reduce the protein gap of the country 8
3. What is holiday bird? Narrate the feeding, fattening, and management systems of geese production briefly 8
4. Rearing of quail in the cage system is preferable to floor system—why? Rearing quail is more profitable than chicken- justify this. 8
5. a) State the special traits of pigeon rearing. Discuss the hatching, rearing and caring management of squab 4  
b) Describe the feeding and housing management system of pigeon 4
6. a) What strategies would you adopt to popularize lean meat production in Bangladesh 4  
b) Mention the prospect and problem of turkey rearing in Bangladesh 4
7. **Write short note on any four of the following:  $4 \times 2 =$**  8.0  
a) Green meat b) Quail ration c) Poor mother d) Watchdog e) Keet management f) Broiler turkey g) Mallard duck

**January to June Semester 2019 Final Examination**  
**Department of Dairy and Poultry Science**  
**MS in Dairy Science**  
**Chittagong Veterinary and Animal Sciences University**  
**Course Title: Advanced 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	

**Chattogram Veterinary and Animal Sciences University**  
**Department of Dairy and Poultry Science**  
**MS in Poultry Science**  
**January-June Semester, Final Examination, 2019**  
**Sub: Poultry Processing and Product Technology**  
**Total marks: 40**  
**Total time: 2 hours**

**Answer any of the five question from below. The mark of each question is indicated in the right-hand side.**

- 1 a) Outline the changes that occur during conversion of muscle into meat? 3
- b) Briefly describe the PSE and DFD condition of poultry meat. 5
2. a) Briefly describe the cause, mechanism, and remedies of oxidative rancidity of frozen meat. 5
- b) Briefly describe the freezing method of preservation with its merits and demerits. 3
3. a) Describe the functional properties of poultry egg. 3
- b) State the factors that influence the quality of table eggs. 5
4. Briefly describe the factors that influences the shelf life of meat. 8
5. State the measure that are necessary to adopt in order to minimize the environmental pollution from poultry processing plant. 8
6. a) Enlist different method of meat packaging. 3
- b) Which methods of meat packaging is preferred and why? 5
7. a) What to do you mean by HACCP, CCP and SOP's. 2
- b) Outline a flow diagram of poultry processing indicating the CCP with their corrective actions. 6
8. a) State the nutritional composition of table eggs. 2
- b) Briefly describe the strategies of dietary manipulation to produce nutritionally enriched table eggs. 6

**January to June Semester 2019 Final Examination**  
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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