

Chittagong Veterinary & Animal Sciences University

MSc in Dairy Science,

January - June Semester, 2016

Sub: Dairy Technology

Course Code: DTL 601

Total Marks: 40

Time : 02 (two) hours

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

1. (a) State the concept of Dairy Technology. 02
(b) Write down the analytical composition of yogurt or ghee. 05
(c) Write a note on nutritive value of buttermilk or cheese or butter oil. 03
2. (a) What is ghee? How does it differ from butter oil? 02
(b) State different methods of making ghee. Enumerate the sequential steps of ghee-making from curd (plain yogurt). 05
(c) State the common defects of ghee with their respective remedial measures. 03
3. (a) State the common ingredients used in ice-cream manufacture with their ~~roles~~ roles. 02
(b) Show the special method of preparation of scoop ice-cream. Name some common fruits used in cup ice-cream. 05
(c) Name some icecream-like products. Briefly state the role of stabilizer in ice-cream. 03
4. (a) State the concept of cheese. Why is cheese called "milk-meal"? 02
(b) State the factors that affect the quality of cheddar cheese. 05
(c) Enumerate the common defects of cured cheeses and explain the remedial measures for "rancidity" in those cheeses. 03
5. Write short notes on any four(4). $4 \times 2.5 = 10.0$
 - (a) Condensed milk;
 - (b) Classification of Dairy products;
 - (c) Packaging, handling and transportation of butter;
 - (d) Food grade colour for dairy foods;
 - (e) Common adulterants of ghee;
 - (f) Cholesterol reduced butter; and
 - (g) Factors affecting quality of stirred yogurt.

January to June Semester, 2016 Final Examination
 Department of Dairy & Poultry Science
MS in Poultry Science
 Chittagong Veterinary and Animal Sciences University
 Course Title: Advanced Biostatistics (Theory)
 Course Title: BST-601
 Full Marks: 40 Time: 2 hours

Answer any 4 from the following questions. Values are shown in the right margin in each question

1. a) Define Simple Linear Regression with an example. 4
 b) A study was made to determine the relation between weekly advertising expenditure and sales of a drug in your field and the data recorded are: 6

Expenditure (in tk)	40	20	25	20	30	50	40	20	50
Sales (in tk)	385	400	395	365	475	440	490	420	560

Draw a Scatter Diagram and fit the regression line to predict weekly sales from advertising expenditures.

2. a) Define treatment and block with an example each. 4
 b) 3 different kinds of hormone were applied to 4 blocks of chickens. Are the treatment and block statistically significant? 6

Block/Treatment	1	2	3
1	1.5	1.3	1.5
2	1.4	1.8	1.6
3	1.35	1.55	1.12
4	1.7	1.1	1.71

3. a) What is hypothesis? Derive the formula to test a population mean with a specific value in case of small samples. 5
 b) Two groups of cows were fed 2 different rations (A & B). 5

At the end of the experiment, the following sample means and variances were calculated.

Particulars	Ration A	Ration B
Mean	3.5	4.6
SD	.021	.034
size	10	16

Is there any significant difference between the given 2 rations?

4. a) Define Non parametric test. Distinguish it from parametric test. 4
 b) A certain drug is effective in curing cold. In an experiment on 500 farm owners suffering from cold, half of them were given sugar pills and half of them were given drug. The reaction to the treatment on patients are recorded as below: 6

	Helped	Harmed	No effect
Sugar pills	130	40	80
Drug	150	3	70

5. a) Distinguish between regression and correlation. 4
 b) Find out the strength of the variables from the given data of weight and age of Chickens from the following sample and comment: 5

Age(month)	5	7	9	11	13	15
Weight(kg)	25	45	60	80	90	1

Ms in Dairy Science Semester Final Exam 2016
January to June Semester
Sub: Dairy Nutrition (DNT-601)
Full Marks: 40; Time: 2 Hours

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

1. a) What is bypass nutrient? Discuss the importance of inert protein for high yielding dairy cow. 4
b) What are the modern techniques available to maintain our dairy cattle? Discuss. 4
2. a) What do you mean by digestibility? How true digestibility differs from apparent digestibility? 4
b) Calculate the DM digestibility of Napier grass having the following information: Feed intake 15 kg, Refusal 2 kg and Faeces outgo 5 kg as fresh basis (DM of feed 25%, refusal 20%, faeces 16%). 4
3. a) What are the factors should be considered for formulating a dairy cow ration? 4
b) Formulate a ration chart for a dairy cow using available feed ingredients which having body weight 300 kg offering milk 15 litres per day. 4
4. a) How could you evaluate the quality of an imported feed sample supplied by a custom's house? 4
b) What is VFA? Discuss the fate of VFA in a dairy cow. 4
5. a) "The composition of milk varied upon the feed offered to a cow"- justify the statement. 4
b) Write down the possible ways of urea feeding to a ruminant with a criticism of Urea feeding. 4
6. a) What are the feeds we are offering to our dairy cattle in Bangladesh? 4
b) Is carbohydrate dietary essential for the ruminant? Discuss primary & secondary fermentation in ruminant. 4
7. Write short notes (any 4) on: 4x2= 8
a) Dispensable nutrient, b) Rumen Undegradable Protein, c) Van Soest method of feed analysis, d) Proximate component of dairy feed, e) By-pass nutrient, f) Feed additives

Chittagong Veterinary and Animal Sciences University
Department of Agricultural Economics and Social Science
MS in Poultry Science
January – June Semester 2016
Course Title: Marketing of Poultry and Poultry Products
Course Code: MPP-601
Course Credit-2, Time : -2 hour, Full Marks: 40

Answer any Four questions

	Marks
1.(a) Discuss the characteristics of poultry products.	5
(b) Do you think different characteristics of poultry products need different types of marketing activities?	5
2. (a) What is marketing channel ?	2
(b) Explain the functions of distribution channel.	5
(c) Why do the intermediaries exist in poultry product marketing?	3
3. (a) Describe the different states of demand with suitable example.	6
(b) Identify the marketing tasks and formal name to address the different states of demand.	4
4.(a) What are the major constraints of poultry industry in Bangladesh?	4
(b) In your opinion what measures would you suggest to overcome these constraints.	6
5. (a) What is the contribution of poultry industry in the economy of Bangladesh?	5
(b) Suggest measures to enhance the level of contribution of poultry industry in the economy.	5
6.(a) Discuss the existing marketing system of day-old chick in Bangladesh.	4
(b) Identify the major problems in the present marketing system of day-old-chick and suggest workable measures to overcome those .	6

Chittagong Veterinary and Animal Sciences University

M S in Poultry Science

January-June Semester Final Examination 2016

Course title: Poultry Breeding

Course Code: PBR-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 is poultry breeding? Differentiate panmixia from random mating. **04**
b) Write down the names of four ancestral chickens. Mention the characteristics for Red Jungle Fowl. **04**
c) Write in detail how you will develop a meat type strain suitable for Bangladesh. **12**
2. a) Define breeding objective. Write down the methods for developing a breeding objective. **06**
b) Egg production to 64 weeks age on 24 pullets, are given below (Table). These pullets are the progeny from 4 sires mated to two dams each and having 3 progeny from a single hatch. **14**

Table: Egg production (no.) record to 64 week age on 24 pullets

Sire	Dam	Progeny egg production		
		1	2	3
1	1	245	236	238
	2	224	232	234
2	1	245	249	245
	2	267	244	263
3	1	243	234	264
	2	265	273	265
4	1	238	243	212
	2	265	220	234

The flock average is 240 eggs and heritability of egg production is 0.22. Calculate Osborne selection index of each bird for selecting the ranking females. Draw your valid conclusion.

- c) Write down the requirements for the construction of selection index. **02**
3. a) Explain the term "specific and combining abilities" for the development of line. **06**
b) Distinguish between heterosis and inbreeding depression. Describe the causes for heterosis with example(s) for a given trait. **10**
c) What is rate of genetic gain? Write the factors those affect the genetic gain for egg production. **04**

Chittagong Veterinary and Animal Sciences

Dept. of Dairy and Poultry Science

M.S. in Dairy Science

January-June Semester/2016

Course Title: Quality Control of Dairy Products

Course Code: QCD-601

Time: 2(two) hours

Total Marks: 40

Answer any 4(four) questions from the following:

1. a) "Quality assurance is the top most factors for sustainable dairy business" - Explain. 5
b) Explain in brief the factors to be considered for controlling the quality of dairy products in an industry. 5
2. a) Mention the common adulterants in Ghee? How will you detect those adulterants? 8
b) Mention the Bangladesh Standard of Ghee. 2
3. a) Mention the common defects, causes and way of remedies of Cheese. 5
b) Mention the common defects, causes and way of remedies of Ice-cream. 5
4. a) Write down the sampling procedure of milk powder for chemical tests. 5
d) Mention the score card of market milk and give explanation each of parameters. 5
5. a) Calculate how much cream of 35% fat and how much milk of 3.5% fat to be mixed to make 400 kg of milk testing 4% fat. 5
b) Standardize 500kg of cream of 40% fat to 20% fat by adding milk containing 3.0% fat. 5

Chittagong Veterinary and Animal Sciences University
M S January – June Semester Final Examination – 2016
MS in Dairy Science
Course title: Dairy Chemistry (theory)
Course Code: DCH – 601

Time: 2 hours

Total marks: 40

Answer any four (4) of the following questions

4X10=40

1. a) State the chemical structure of milk coagulum. 2
- b) What is the mechanism of di-acetyl formation during preparation of aromatic dairy products? 4
- c) State the detail composition of milk in a diagram. 4
2. a) State the nutritive value of lactose. What are the natural sources of lactose? 4
- b) Briefly describe the lactose biosynthesis process. 4
- c) Briefly describe the fate of lactose during yoghurt preparation. 2
3. a) Briefly describe the chemical changes occurred during ghee preparation. 4
- b) What are the morphological changes observed during churning of cream for butter preparation? 6
4. a) Classify milk lipids with example. 2
- b) Draw the chemical structure of milk fats. 4
- c) Briefly describe the biosynthesis process of milk fat. 4
5. a) Classify milk proteins with their composition. 2
- b) Describe the role of casein in coagulum based dairy products. 4
- c) Draw the chemical structure of casein. 4

TABLE—4. t DISTRIBUTION
Values of $t_{\alpha, v}$

α	Values of $t_{\alpha, v}$				
	0.05	0.025	0.01	0.005	
1	6.314	12.706	31.821	63.657	
2	2.920	4.303	6.965	9.925	
3	2.353	3.182	4.541	5.841	
4	2.132	2.776	3.747	4.604	
5	2.015	2.571	3.365	4.032	
6	1.943	2.447	3.143	3.707	
7	1.895	2.365	2.998	3.499	
8	1.860	2.306	2.896	3.355	
9	1.833	2.262	2.821	3.250	
10	1.812	2.228	2.764	3.169	
11	1.796	2.201	2.718	3.106	
12	1.782	2.179	2.681	3.055	
13	1.771	2.160	2.650	3.012	
14	1.761	2.145	2.624	2.977	
15	1.753	2.131	2.602	2.947	
16	1.746	2.120	2.583	2.921	
17	1.740	2.110	2.567	2.898	
18	1.734	2.101	2.552	2.878	
19	1.729	2.093	2.539	2.861	
20	1.725	2.086	2.528	2.845	
21	1.721	2.080	2.518	2.831	
22	1.717	2.074	2.508	2.819	
23	1.714	2.069	2.500	2.807	
24	1.711	2.064	2.492	2.797	
25	1.708	2.060	2.485	2.787	
26	1.706	2.056	2.479	2.779	
27	1.703	2.052	2.473	2.771	
28	1.701	2.048	2.467	2.763	
29	1.699	2.045	2.462	2.757	
30	1.697	2.042	2.457	2.751	
40	1.684	2.021	2.423	2.723	
60	1.671	2.000	2.390	2.690	
120	1.658	1.980	2.350	2.650	
∞	1.645	1.960	2.300	2.600	

TABLE—3 χ^2 DISTRIBUTION*
Values of $\chi^2_{\alpha, v}$

α	Values of $\chi^2_{\alpha, v}$									
	0.995	0.99	0.975	0.95	0.05	0.025	0.01	0.005		
1	0.000	0.000	0.001	0.004	3.841	5.024	6.635	7.879		
2	0.010	0.020	0.051	0.103	5.991	7.378	9.210	10.597		
3	0.072	0.115	0.216	0.352	7.815	9.348	11.345	12.838		
4	0.207	0.297	0.484	0.711	9.488	11.143	13.277	14.860		
5	0.412	0.554	0.831	1.145	11.070	12.832	15.086	16.750		
6	0.676	0.872	1.237	1.635	12.592	14.449	16.812	18.548		
7	0.989	1.239	1.690	2.167	14.067	16.013	18.475	20.278		
8	1.344	1.646	2.180	2.733	15.507	17.535	20.090	21.955		
9	1.735	2.088	2.700	3.325	16.919	19.023	21.666	23.589		
10	2.156	2.558	3.247	3.940	18.307	20.483	23.209	25.188		
11	2.603	3.053	3.816	4.575	19.675	21.920	24.725	26.757		
12	3.074	3.571	4.404	5.226	21.026	23.337	26.217	28.300		
13	3.565	4.107	5.009	5.892	22.362	24.736	27.688	29.819		
14	4.075	4.660	5.629	6.571	23.685	26.119	29.141	31.319		
15	4.601	5.229	6.262	7.261	24.996	27.488	30.578	32.801		
16	5.142	5.812	6.908	7.962	26.296	28.845	32.000	34.267		
17	5.697	6.408	7.564	8.672	27.587	30.191	33.409	35.718		
18	6.265	7.015	8.231	9.390	28.869	31.526	34.805	37.156		
19	6.844	7.633	8.907	10.117	30.144	32.852	36.191	38.582		
20	7.434	8.260	9.591	10.851	31.410	34.170	37.566	39.997		
21	8.034	8.897	10.283	11.591	32.671	35.479	38.932	41.401		
22	8.643	9.542	10.982	12.338	33.924	36.781	40.289	42.796		
23	9.260	10.196	11.688	13.091	35.172	38.076	41.638	44.181		
24	9.886	10.856	12.401	13.848	36.415	39.364	42.980	45.558		
25	10.520	11.524	13.120	14.611	37.652	40.646	44.314	46.928		
26	11.160	12.198	13.844	15.379	38.885	41.923	45.642	48.290		
27	11.808	12.879	14.573	16.151	40.113	43.194	46.963	49.645		
28	12.461	13.565	15.308	16.928	41.337	44.461	48.278	50.993		
29	13.121	14.256	16.047	17.708	42.557	45.722	49.588	52.336		
30	13.787	14.953	16.791	18.493	43.773	46.979	50.892	53.672		
40	20.706	22.164	24.433	26.509	55.759	59.342	63.691	66.766		
50	27.991	29.707	32.357	34.764	67.505	71.420	76.154	79.490		
60	35.535	37.485	40.482	43.188	79.082	83.298	88.379	91.952		
70	43.275	45.442	48.758	51.739	90.531	95.023	100.425	104.215		
80	51.172	53.540	57.153	60.391	101.879	106.629	112.329	116.321		
90	59.196	61.754	65.647	69.126	113.145	118.136	124.116	128.299		
100	67.328	70.065	74.222	77.929	124.342	129.561	135.807	140.169		

Chittagong Veterinary and Animal Sciences University
M S January – June Semester Final Examination – 2016

MS in Dairy Science

Course title: Functional Dairy Ingredients (theory)

Course Code: FDI – 601

Time: 2 hours

Total marks: 40

Answer any four (4) of the following questions

4X10=40

1. a) State the superiority of functional food on other food items. 2
- b) Briefly describe the significant bioactive functions of milk derived functional food. 4
- c) Enumerate the cardiovascular functions of dairy ingredients. 4
2. a) Tabulate the dairy products having potential health benefits. 4
- b) Briefly describe the role of the dairy components as functional ingredients. 4
- c) What are the milk components having the ability to prevent cancers? 2
3. a) What ^{are} the role of the dairy food in reducing blood cholesterol level? 4
- b) Define probiotics with examples. State the role of cheese as calcium supplement in human diet. 6
4. a) What is lactoferrin? 2
- b) Enumerate the beneficial effects of lactoferrin in human body. 4
- c) Briefly describe the effects of dietary milk peptides. 4
5. a) Enlist the milk components having opioid like effects. 2
- b) Illustrate the functions of milk components having immunomodulatory effect. 4
- c) What are the natural antimicrobials present in milk? Briefly discuss their effects. 4

Chittagong Veterinary and Animal Sciences University
Dept. of Dairy and Poultry Science
MS in Poultry Science Final Examination
Semester: January-June, 2016
Course Title: Poultry Processing and Products Technology (PPT-601)
Total marks- 40; Time: 2 Hours

Answer any five questions of the following wherein question no. 1 is compulsory; Each question has equal marks. Figures in the right margin indicate full marks.

1. a) What is egg? State the nutritional composition and food value of poultry eggs of different species. 4
- b) Describe the important parameters with which you can assess the quality of poultry meat and eggs in a nutshell. 4
2. a) What is simmering? State the various categories of processed meat products with examples. 4
- b) Define aging? Describe the different problems of muscle encountered after slaughtering of birds. 4
3. What is poultry carcass grading? Describe the standards or mechanisms of grading poultry (live, ready-to-cook, small/large scale operation) for marketing. 8
4. a) Enumerate the poultry products (meat and egg) available in the supermarket. 3
- b) Write down the industrial utilization and bakery uses of eggs and state the procedure of manufacturing Turkey Ham, Turkey Salami and Pickle Pimento Loaf. 5
5. Sketch the poultry processing plant. Describe the important steps of broiler processing plant. 8
6. a) Mention the different methods of preservation and storage of poultry meat and eggs. 2
- b) Describe three common methods of preserving poultry meats and eggs respectively. 6
7. Give short note (any four) of the following (2 x 4 = 8): 8
 - a) Balut
 - b) Chicken Nuggets
 - c) Bio-preservation & Hurdle Technology
 - d) Meat binder and fillers
 - e) Pasteurized liquid eggs
 - f) Ante-mortem and post-mortem inspection of poultry

Chittagong Veterinary & Animal Sciences University
Department of Dairy & Poultry Sciences

MSc in Poultry Science

January - June Semester, 2016

Sub: Poultry Farm Planning & Management

Total Marks - 40

Time ——— 02 (Two hrs)

Answer any four questions. Figures in the right margin indicate full marks. Split answers are discouraged.

1. (a) State the basic concept of "Farm Planning". 03
(b) How can you evaluate the feasibility of planning of an intensive layer farm? 03
(c) State the general considerations of a farm planning. 04
2. (a) What do you mean by "Biosecurity of a Poultry Farm"? 03
(b) How does it differ from biosecurity of a hatchery? 03
(c) State the common practices of hygienic measures of a commercial broiler farm. 04
3. (a) What are the prime factors needed to make a breeding farm profitable? 03
(b) State the common infrastructure needed in a poultry breeding farm. 03
(c) Write a note on "Breeding farm management". 04
4. (a) State the relationship between production and environment. 03
(b) What are the common techniques of keeping environmental pollution reasonable in an intensive layer farming? 03
(c) Write a note on "Preparation of ~~waste litter~~ manure from used litter" 04
5. Write short note (any four) 4x2.5 = 10.
 - (a) Techniques of market identification;
 - (b) Systems of poultry production under intensive farming;
 - (c) Requirements of a region to be a poultry zone;
 - (d) Capital investment in a breeding farm;
 - (e) Recurrent expenditures in a commercial farm;
 - (f) Equity in establishing infrastructures;
 - (g) Calculation of "Depreciation Cost" for net income.

Chittagong Veterinary and Animal Sciences University
Dept. of Dairy and Poultry Science
MS in Poultry Science Final Examination
Semester: January-June, 2016
Course Title: Ducks and Specialized Fowl Production (DSF-601)
Total marks- 40; Time: 2 Hours

Answer any five questions of the following wherein question no. 1 is compulsory; Each question has equal marks. Figures in the right margin indicate full marks.

1. What is integrated farming? Describe a strategy that you would adopt to do proper use of space and poultry wastes for meeting high demand of protein for the consumers. 8
2. i) What strategies would you adopt to popularize turkey production in Bangladesh? 4
ii) Describe the feeding and housing system of turkey. 4
3. i) Classify breeds of geese on the basis of body weight and describe two of them. 4
ii) State the feeding and fattening management of geese 4
4. i) "Pigeon farming for profitable squab production is feasible in Bangladesh"-do you agree with this statement? Justify 4
ii) Describe breeding and rearing management of pigeon. 4
5. Rearing of quail in the cage system is preferable to floor system- Why? Rearing quail is more profitable than chicken- discuss it. 8
6. Which system of duck rearing is suitable in our country and why? What are the duck production systems practiced in Southeast Asia. Briefly describe. 8
7. Mention the prospect and problems of guineafowl production in Bangladesh. Discuss the brooding and rearing management of keet and guineafowl. 8