

MS in Dairy Science Final Examination

July to December Semester 2019

Course Title: **Dairy Cattle Feeds and Fodder Production and Preservation**

Course Code: **DFP -602**

Total Marks: 40, Time: 2 hours

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

1. a) What is NCFR? Briefly discuss the categories of NCFR available in Asia. 5  
b) Define fodder? Discuss the standard cultivation procedure of Napier grass. 5
2. a) What is toxic factor? Write short notes on nitrate poisoning. 5  
b) Briefly discuss different types of toxic factors coming from feedstuffs. 5
3. a) Discuss about conservation of forages with its importance in dairy farming. 5  
b) Define silage? Discuss how silage is formed in controlled fermentation. 5
4. a) What is hay? What are the requisites of good quality hay? 5  
b) Define haylage. Discuss how nutrients are lost in standard hay making? 5
5. a) Discuss the effective preventive measures to be taken to reduce losses from poisonous plants. 5  
b) What do understand about poisonous plant? Briefly discuss the factors affecting the prevalence of poisoning by plants. 5

**Chittagong Veterinary and Animal Sciences University**

**MS July-December Semester 2019 Final Examination**

**M. S. in Dairy Science**

**Course Title: Market Milk Production and Processing (Theory), Course Code: MPP-602**

**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 market milk? Write down the analytic detail nutritional composition of milk. 3
- b) Make a plan for the establishment of milk processing plant with layout. 7
2. a) What is HTST Pasteurization? Briefly describe the HTST milk pasteurization. 6
- b) State the effect of homogenization on milk and milk products. Show it diagrammatically. 4
3. a) How can individual liquid milk processing plants evaluate the quality of raw milk? 3
- b) What do you mean by standardization? If a dairy has 160 kg of 40% cream and wishes to standardize it to 32% cream, how much skim milk must be added? 4
- c) Diagrammatically explain the automatic standardization process. 3
4. a) Write do you mean by milk prevention? Enlist the common milk prevention techniques'. 3
- b) State one most important milk prevention technique(s) for rural area of Bangladesh. Briefly described with sketch. 7
5. a) Write do you mean by flavored milk, reconstituted milk and toned milk? 3
- b) Illustrate the manufacturing process of flavored milk. 4
- c) Briefly describe the advantages and disadvantages of sterilized milk. 3
6. Write short notes (**any 4**) : **2.5 x 4=10**
  - a). History of Milk Vita b). Milk chilling c). Judging and grading of milk d). Packaging of market milk e) Sanitization of dairy equipment's and plants

**Chittagong Veterinary and Animal Sciences University**

**MS July-December Semester 2019 Final Examination**

**M. S. in Dairy Science**

**Course Title: Microbiology of Milk & Milk Products (Theory), Course Code: MMP-602**

**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) Define Dairy Microbiology? Write down the importance of Dairy Microbiology. **3.0**  
b) Briefly describe molecular methods for microbial identification in dairy products. **5.0**  
c) State the health benefit of lactic acid bacteria? **2.0**
  
2. a) What is milk-borne disease? Enlist the common milk-borne disease. **3.0**  
b) State one most important organism for milk- borne disease with their sign, symptoms, prevention and control. **5.0**  
c) How to prevent milk-borne infectious diseases? **2.0**
  
3. a) Define Thermotolerant Bacteria? Enlist the common sources of Thermotolerant Bacteria. **3.0**  
b) State Problems of Thermotolerant Bacteria in Milk & Milk Products. **3.0**  
c) Illustrate the Microbiological Standards of Milk & Milk Products **4.0**
  
4. a) What is dairy starter culture? Classify the dairy starter culture. **2.0**  
b) Give a flow chart for the pure culture production. **3.0**  
c) Enlist the common culture defects. **2.0**  
d) What are the bacterial cultures used in fermented milk product manufacture. **3.0**
  
5. Write short notes (**any 4**) : **2.5 x 4=10**  
a). LAB plasmids, b). Culture media used in dairy microbiology, c). Common microbial defects & their control of cheese, d). Genetics of lactic acid bacteria and e) HACCP

**Chittagong Veterinary and Animal Sciences University**

**Dept. of Dairy and Poultry Science**

**MS in Dairy Science**

**Final Examination, July - December Semester/2019**

**Course: Advanced Dairy Cattle Production**

**Course Code: DCP-602; Total Marks: 40**

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

1. a) How will you identify the mismanagements in a dairy farm through analyzing breeding and livestock records? 06  
b) List the records should be kept in an ideal commercial dairy farm and mention the general objectives of record keeping in a dairy farm. 04
2. How the intense solar radiation does affect the temperate type cattle in extensive rearing system? 10
3. Discuss the care and management of heifer from breeding to freshening. 10
4. a) Mention the current constrains of organic dairy farming in Bangladesh. 03  
b) List the pre-requisites of organic dairy farming. 03  
c) Discuss the problems and prospects of replacement heifer farming in Chattogram. 04
5. a) List the methods of payment of milk with advantages and disadvantages practicing throughout the world. 05  
b) Which method of payment of milk is more accepted to the farmers, processor and consumers and why? 05

Chittagong Veterinary and Animal Sciences University

Dept. of Dairy and Poultry Science

Final Examination July-December Semester/2019

MS in Dairy Science

Course: Dairy Farm Planning and Management

Course Code: FPM-602, Total Marks: 40, Time: 2 hour

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

You are a recent graduate of CVASU has been joined in Rainbow Agricultural Consultancy Farm as a dairy consultant. Last Thursday an entrepreneur has come to you and given a big task for preparation a dairy project of 250 dairy cows aiming to get sufficient amount of loan from City bank. After calculation it was seen that the cost of land, land development, farm construction, equipments & machineries, dairy cow, preliminary farm operation cost, inflation & contingency, pre- production expenditure and interest during grace period were 47500000/=, 1500000/=, 32000000/=, 9 500000/=, 37500000/=, 2380000/=, 6519000/=, 300000/= and 3977226/=, respectively. In addition to that the following information are provided by the entrepreneur

Name of entrepreneur: Md. Lutfar Rahman; Name of the project: Kaptai Dairy Complex; Own Land: 12 acres for establishing infrastructure of the farm , Location of the farm land: J.L. No. 58, B.S. No. 296, Hathazari, Chittagong. Fodder land will be purchased from private sources,. Duration of loan: 10 years; Grace period: 6 months; Interest rate/year: 09%; Mode of payment of loan: Equal monthly Installment (EMI).

Calculated detail of equal monthly installment (EMI):

MONTHS	EMI	INTEREST	PRINCIPAL REPAYMENT	OST PRINCIPAL
0				84122500
1	1,100,393	630919	469474	83653026
2	1,100,393	627398	472995	83180031
3	1,100,393	623850	476542	82703489
4	1,100,393	620276	480116	82223372
5	1,100,393	616675	483717	81739655
6	1,100,393	613047	487345	81252310
7	1,100,393	609392	491000	80761310
8	1,100,393	605710	494683	80266627
9	1,100,393	602000	498393	79768234
10	1,100,393	598262	502131	79266103
11	1,100,393	594496	505897	78760206
12	1,100,393	590702	509691	78250515
13	1,100,393	586879	513514	77737001
14	1,100,393	583028	517365	77219636
15	1,100,393	579147	521245	76698391
16	1,100,393	575238	525155	76173236

17	1,100,393	571299	529093	75644143
18	1,100,393	567331	533062	75111081
19	1,100,393	563333	537060	74574022
20	1,100,393	559305	541087	74032934
21	1,100,393	555247	545146	73487789
22	1,100,393	551158	549234	72938555
23	1,100,393	547039	553353	72385201
24	1,100,393	542889	557504	71827698
25	1,100,393	538708	561685	71266013
26	1,100,393	534495	565898	70700115
27	1,100,393	530251	570142	70129973
28	1,100,393	525975	574418	69555556
29	1,100,393	521667	578726	68976830
30	1,100,393	517326	583066	68393763
31	1,100,393	512953	587439	67806324
32	1,100,393	508547	591845	67214479
33	1,100,393	504109	596284	66618195
34	1,100,393	499636	600756	66017439
35	1,100,393	495131	605262	65412177
36	1,100,393	490591	609801	64802375
37	1,100,393	486018	614375	64188001
38	1,100,393	481410	618983	63569018
39	1,100,393	476768	623625	62945393
40	1,100,393	472090	628302	62317091
41	1,100,393	467378	633014	61684077
42	1,100,393	462631	637762	61046314
43	1,100,393	457847	642545	60403769
44	1,100,393	453028	647364	59756405
45	1,100,393	448173	652220	59104185
46	1,100,393	443281	657111	58447074
47	1,100,393	438353	662040	57785035
48	1,100,393	433388	667005	57118030
49	1,100,393	428385	672007	56446022
50	1,100,393	423345	677047	55768975
51	1,100,393	418267	682125	55086850
52	1,100,393	413151	687241	54399608
53	1,100,393	407997	692396	53707213

54	1,100,393	402804	697589	53009624
55	1,100,393	397572	702820	52306804
56	1,100,393	392301	708092	51598712
57	1,100,393	386990	713402	50885310
58	1,100,393	381640	718753	50166557
59	1,100,393	376249	724143	49442414
60	1,100,393	370818	729575	48712839
61	1,100,393	365346	735046	47977793
62	1,100,393	359833	740559	47237234
63	1,100,393	354279	746113	46491120
64	1,100,393	348683	751709	45739411
65	1,100,393	343046	757347	44982064
66	1,100,393	337365	763027	44219037
67	1,100,393	331643	768750	43450287
68	1,100,393	325877	774515	42675772
69	1,100,393	320068	780324	41895447
70	1,100,393	314216	786177	41109270
71	1,100,393	308320	792073	40317197
72	1,100,393	302379	798014	39519184
73	1,100,393	296394	803999	38715185
74	1,100,393	290364	810029	37905156
75	1,100,393	284289	816104	37089052
76	1,100,393	278168	822225	36266828
77	1,100,393	272001	828391	35438436
78	1,100,393	265788	834604	34603832
79	1,100,393	259529	840864	33762968
80	1,100,393	253222	847170	32915798
81	1,100,393	246868	853524	32062274
82	1,100,393	240467	859926	31202348
83	1,100,393	234018	866375	30335973
84	1,100,393	227520	872873	29463100
85	1,100,393	220973	879419	28583681
86	1,100,393	214378	886015	27697666
87	1,100,393	207732	892660	26805006
78	1,100,393	201038	899355	25905651

79	1,100,393	194292	906100	24999551
80	1,100,393	187497	912896	24086655
81	1,100,393	180650	919743	23166912
82	1,100,393	173752	926641	22240271
83	1,100,393	166802	933591	21306681
84	1,100,393	159800	940593	20366088
85	1,100,393	152746	947647	19418441
86	1,100,393	145638	954754	18463687
87	1,100,393	138478	961915	17501772
88	1,100,393	131263	969129	16532642
89	1,100,393	123995	976398	15556245
90	1,100,393	116672	983721	14572524
91	1,100,393	109294	991099	13581425
92	1,100,393	101861	998532	12582893
93	1,100,393	94372	1006021	11576872
94	1,100,393	86827	1013566	10563306
95	1,100,393	79225	1021168	9542139
96	1,100,393	71566	1028827	8513312
97	1,100,393	63850	1036543	7476769
98	1,100,393	56076	1044317	6432452
99	1,100,393	48243	1052149	5380303
100	1,100,393	40352	1060040	4320263
101	1,100,393	32402	1067991	3252272
102	1,100,393	24392	1076001	2176272
103	1,100,393	16322	1084071	1092201
104	1,100,393	8192	1092201	0

Based on above mentioned scenario and information answer the following questions

1. Prepare a daily routine activities plan considering milk marketing time at 9.00 AM and 4.30 PM in morning and evening respectively. 08
2. Show the progress of the herd size from 1<sup>st</sup> year of farming to loan period 07
3. Show the ratio of equity and loan. 05
4. Calculate the recurring expenditures during loan period. 10
5. Calculate the gross income of the farm during project period. 05
6. Forecast the annual income of the project during loan period. 05



M.Sc Poultry science final examination 2019

Semester: July-December

Course: Parent Stock & Commercial Layer Management

Course code: PCL-602

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

Total marks: 40

Time: 2 hours

Questions:

1. Describe management of commercial layer farm in summer.
2. Describe the steps of remedy of heat stress on broiler breeder ?
3. Write the effect of light on egg production. Write in detail of lighting management in parent flock.
4. Write in detail of the Biosecurity in a breeder and a commercial layer farm.

**Chattogram Veterinary and Animal Sciences University**  
**Department of Dairy and Poultry Science**  
**MS in Dairy Science**  
**July-December Semester**  
**Final examination-2019**  
**Sub: Research Methodology**  
**Course Code: RMD-602**  
**Total marks: 40**  
**Total time: 2 hours**

Answer any of the ~~four~~<sup>five</sup> questions (5X8= 40). The mark for each question is indicated in the right-hand side).

1. a) Define the term "research problem". 1
- b) Formulate a research problem from your relevant field by considering steps involve in preparing the research problem. 7
2. a) What is hypothesis? Differentiate between alternate and null hypothesis with example from the relevant field. 4
- b) What do you mean by type I and Type II error? Explain them with relevant example from your research field. 4
3. a) Briefly describe the component of research design. 4
- b) Describe the factors that affects the research design. 4
4. a) What is mean by literature searching? What is the purpose of literature searching? 4
- b) What do you mean by primary data? What are the various methods of collecting primary data? 4
5. a) What do you mean by research design? What are the criteria of a good research design? 5
- b) Differentiate between open and closed types questionnaire. 5
6. Formulate a research proposal from your relevant field. Enlist the main contents of a research proposal. 3
7. a) What do you mean by variable? Briefly describe the different types of variables? 4
- b) Suppose you are going to investigate the factors that influence the milk production of Red Chittagong cow. What types of variables you will be collected for this purpose? And why? 4

**Chittagram Veterinary and Animal Sciences University**  
**Department of Dairy and Poultry Science**  
**MS in Poultry Science**  
**July-December Semester, Final examination-2019**  
**Sub: Parent stock and commercial broiler management**  
**Sub code: PCB-602**  
**Total marks: 40**  
**Total time: 2 hours**

**Answer any of the five questions (5X8= 40). The mark for each question is indicated in the right-hand side).**

1. a) Briefly describe the management procedures of commercial broilers from day one to marketing. 4
- b) Briefly describe the biosecurity of broiler breeder farm. 4
2. a) Define parent stock and pure line. 2
- b) Write down the difference between broiler parent stock and commercial broiler. 6
3. Describe the factors that affect the reproductive performance of broiler breeder hen. 8
4. a) Why feed restriction is necessary for broiler breeder parent stock? 3
- b) Briefly describe the feed restriction methods in broiler breeder. 5
5. a) Define and explain the term "Broiler breeder paradox". 4
- b) State the nutrient specification for Cobb and Ross parent stock. 4
6. a) Define the term photorefractoriness, juvenile photorefractoriness and adult photorefractoriness. 4
- b) How photorefractoriness is avoided in broiler breeder management? 4
7. a) Define FCR and FCE. State the factors that affect the FCR of commercial broiler. 4
- b) How will you improve the FCR of commercial broiler chickens? 4

**Chattogram Veterinary and Animal Sciences University**

M S in Animal and Poultry Nutrition

July-December Semester Final Examination 2019

**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) Write down the relationship between nutrition and reproduction. Mention the role and amount / day of water and fat soluble vitamin in a cow. **8**
- b) Write down energy and protein requirement of a 150 days pregnant cow having 380 kg live weight and produce 10.5 liter milk daily. **8**
- c) Mention the factors for selecting the feed ingredients for ration formulation of a lactating cow. **4**
  
2. a) Narrate 100 cow dairy herd in consideration of Markov chain. **5**
- b) Write how you will analyze the dairy herd fertility under cooperative dairying conditions of Bangladesh. **9**
- c) What is feeding standard? Describe a feeding standard with its limitation which are usually using by the commercial dairy sector. **6**
  
3. a) Write how milk compositions determine the milk value? Write in brief the feeding of a heifer. **6**
- b) Hormones are very much useful for the reproductive pattern of a ewe- Justify. **4**
- c) Narrate a ration with available feed ingredients for a yearling bull having 650 kg live weight whose dairy live weight gain is 550g/day, this bull is use to serve a cow per week and the ejaculate volume is 10ml/service using AFRC standard. **10**

**Chittagong Veterinary and Animal Sciences University**  
**MS in Poultry Science (July- December) final Exam-2019**  
**Subject: Poultry Feeds and Feeding (Theory)**  
**Course Code: PFF-602; Total marks: 40; Time: 2 hours**

Answer any five of the following questions **including question 1**;  
Figures in the right margin indicate the full marks

- 1 a). Define feed, feeding, challenge feeding and phase feeding 2.0  
b). State the challenges that concern you and our next generation from the standpoint of nutrition 6.0
2. a). What is medicated feed? Discuss different types of medicated feeds used for poultry production 4.0  
b). Describe the strategies with which you can reduce the feed cost of poultry production 4.0
3. a) What is FCR and FCE ? Distinguish between FCR and FCE 4.0  
b). State the factors that affect FCR of broiler. Calculate the feed requirement, cost, and FCR of layer chicken (HYS) up to pre-laying stage. 4.0
4. a). What is anti-nutritional factors (ANF) ? State the ANF found in the conventional feeds of poultry, and the strategies to eliminate the ANF of feed 6.0  
b). Discuss the demerits of using animal protein (fish meal) in poultry diet 2.0
5. a). What is biological value and CP? How could you determine the protein quality of feed 4.0  
b). What is feed quality and ileal digestibility of feed ? State the steps for ensuring the quality of poultry feed 4.0
6. a). State the interaction of nature and nurture for the optimum production of poultry 5.0  
b). Discuss the nutritional factors for optimization of egg shell quality 3.0
- 7 a). What is pro-vitamins, vitamins, acute phase protein and essential amino acid' 2.0  
b). What is macro and micro minerals? State the diseases of poultry that arise from minerals & vitamins deficiency in the diet 6.0

**Chittagong Veterinary and Animal Sciences University**  
**MS in Poultry Science (July- December) final Exam-2019**  
**Subject: Biochemistry of Egg (Theory)**  
**Course Code: BCE-602; Total marks: 40; Time: 2 hours**

Answer any five of the following questions **including question 1**;  
Figures in the right margin indicate the full marks

1. a) What is egg, balut and organic egg? 'The alternative of egg is merely the egg'-justify this 5.0
- b) State the functional properties of egg 3.0
2. a) What is HDL, LDL and VLDL ? State the merits and demerits of egg cholesterol for life 5.0
- b). What is egg yolk and vitelline membrane ? Show the details composition of egg yolk 3.0
3. a) Discuss egg formation mechanism of chicken 5.0
- b). Mention the typical constituents of egg shell membrane 3.0
4. a) What is egg quality? Discuss the methods for determination of egg quality 3.0
- b) Draw and label the anatomical structure of egg with description 5.0
5. a) Discuss the commercial methods for egg preservation 4.0
- b). Discuss the factors that are responsible for the reduction of egg size 4.0
6. a). Draw and label of microscopic structure of egg shell 4.0
- b). Discuss the uses and mode of utilization of egg and egg shell 4.0
- 7 a). What is egg protein and CP? Mention the proteins found in the egg albumen 4.0
- b).. Discuss the microbial impact on egg deterioration 4.0

**Chattogram Veterinary and Animal Sciences University**  
**Department of Dairy and Poultry Science**  
**MS in Poultry Science**  
**July-December Semester**  
**Final examination-2019**  
**Sub: Hatchery operation and management**  
**Sub code: HMT-602**  
**Total marks: 40**  
**Total time: 2hours**

**Answer any of the five questions (5X8= 40).The mark for each question is indicated in the right-hand side).**

1. What are the important points to be considered during planning of a hatchery establishment? 8
2. a) Describe briefly the egg formation process in the oviduct of poultry. 5  
b) How light influence the egg formation in poultry? 3
3. a) Briefly describe the characteristics of hatching egg. 4  
b) Explain the effect of storage on hatchability of egg. 4
4. a) Define incubation. Briefly mention the incubation period for different poultry species. 5  
b) Briefly describe the factors that affect the incubation time. 3
5. a) Briefly describe the methods for chick quality evaluation? 4  
b) Describe the factors that influence the quality of chick. 4
6. a) Define fertility and hatchability. 2  
b) Briefly describe the different factors that influence the fertility of eggs. 6
7. Describe the sanitation and hygiene and biosecurity procedures of a hatchery 8