

**Chattogram Veterinary and Animal Sciences University**  
**MS in Poultry Science Final Exam-2023**  
**Semester: July- December-2023**  
**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) 'Egg is a superfood or incredible nutrient power house' -justify 4.0  
 b) Discuss the chemical composition of poultry egg 4.0
2. a) What is egg quality? Discuss how egg quality can be assessed 6.0  
 b) Cite the nutrient amount found in egg that can fulfil the protein need of human being each day 2.0
3. a) Write the eggshell formation mechanism, and discuss the microscopic composition of eggshell 6.0  
 b) Write the nutritional requirements for the optimization of eggshell 2.0
4. Define egg preservation. State commercial methods of preserving poultry eggs 8.0
5. Mention the various uses of eggs including the proportion of egg utilization globally 8.0
6. a) What is protein? State the composition of egg protein with its characteristics 4.0  
 b) Mention the functional properties attributed to egg proteins in food systems 4.0
7. Give a short note -any five of the following: (1.6 × 5) 8.0
  - a) Organic egg 1.6
  - b) Egg fallacy 1.6
  - c) Anti-nutritional factors of eggs 1.6
  - d) Brown egg versus white egg 1.6
  - e) Balut 1.6
  - f) Microbiological impact on the spoilage of egg 1.6

**Chattogram Veterinary and Animal Sciences University**  
**MS in Poultry Science Final Exam-2023**  
**Semester-July-December-2023**  
**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 diet, feed grade, medicated feed, balanced diet & unconventional feed                                       | 2.0 |
| b) State the nutritional challenges that we are and our next generation will confront                                   | 6.0 |
| 2. a) Define feed supplements and additives.State different sorts of additives used in poultry                          | 4.0 |
| b) Discuss the pre-requisites for the formulation of poultry diet   | 4.0 |
| 3. a) What is IP6?  | 2.0 |
| b) Discuss the limiting factors present in poultry feeds and the process of elimination                                 | 6.0 |
| 4 .a) What is biological value? State the physical, biological, and chemical processes of evaluating poultry feedstuffs | 6.0 |
| b) Calculate the amount of feed and price needed to feed 1200 layers up to pre-laying stage                             | 2.0 |
| 5. a) Define vitamins & pro-vitamins.State the nutritional disorders in poultry   | 6.0 |
| b) Distinguish between fat-soluble and water-soluble vitamins   | 2.0 |
| 6.a) What is choice feeding? State the factors that affect the choice feeding of poultry.                               | 3.0 |
| b) Discuss the inter-relationship of minerals and vitamins  | 5.0 |
| 7. Write a short note: Any four of the following (4 × 2) =  | 8.0 |
| a) Nutritional management of layer during heat stress   | 2.0 |
| b).Gizzerosine  | 2.0 |
| c) Nature and nurtureinteraction on poultry   | 2.0 |
| d). Protein concentrate   | 2.0 |
| e) Premix   | 2.0 |
| f) Feeding standard   | 2.0 |
| g) Calorie protein ratio  | 2.0 |

MSc. Poultry Science

Final Examination 2023

Course: Parent stock and commercial broiler management

Total marks:40

Time: 2 hours

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

1. Give a plan for production of 880000 commercial broiler monthly.
2. How would you plan for hatch of 850000 day old broiler monthly?
3. Write in detail of management and biosecurity practice in broiler breeder farm.
4. Write importance of vaccination. Give vaccination schedule in broiler breeder farm from day old to all out.

MSc Poultry Science

Final Examination 2023

Course: Parent stock and commercial layer management

Total marks:40

Time 2 hours

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

1. Give a plan for production of 10000 table eggs daily.
2. How would you plan for hatch of 8000 chicks weekly?
3. Write in detail of management practices in a parent stock farm.
4. Give vaccination schedule and biosecurity program in a layer farm

Chattogram Veterinary and Animal Sciences University  
MS in Poultry Science Final Exam-2023 --(July-December)

Subject: Poultry Behaviour and Welfare -Theory

Course code: PBW-602; Total marks: 40; Time: 2 hours

[Answer any five questions including 4, each having equal marks; Figures in the right margins indicate full marks ]

1. What is poultry behavior and welfare ? State the importance of poultry behaviour and welfare 7.0
- b). Mention the five main things of poultry welfare 1.0
- 2.. Discuss the brooding, breeding and social behaviours of poultry 8.0
3. Enlist the factors that govern the behaviour of the poultry. Write down the consequences of poultry behaviour during heat-stress condition 8.0
4. a) Enlist the vices of poultry. 2.0  
b) What is injurious pecking behaviour of poultry ? Discuss the factors that affect the this behaviour of poultry and ways to remove this behaviour 6.0
5. Discuss the threats that wildfowl face and the potential solutions to these threats 8.0
6. Discuss why poultry welfare is important in a captive/intensive condition of rearing. 8.0
7. Discuss how poultry welfare can be improved beyond just using of legislative rules or regulations: 8.0
8. Write short note : Any four of the following : ( 2× 4) 8.0
  - a) Courtship and broodiness
  - b. Cannibalism
  - c. Preening
  - d. Roosting and perching
  - e. Pecking and the peck order
  - f. Factors governing behaviour responses
  - g. Beak trimming
  - h. Concept of poultry welfare

**Chattogram Veterinary and Animal Sciences University**  
**MS in Poultry Science Final Exam-2023 --(July-December)**  
**Subject: Hatchery Operation and Management-Theory**  
**Course code: HMT-602; Total marks: 40; Time: 2 hours**

[Answer any five questions with the 1; Figures in the right margin indicate the full marks ]]

1. a) What is hatchery supply flock? Discuss the different steps of hatchery operation for the production of DOC 5.0  
b) What is challenge feeding, SSF and phase feeding? Cite the breeder male management system in a breeding flock 3.0
- 2.a) What is uniformity? Why uniformity maintaining in a breeder flock is important ? 4.0  
b) State the control feeding system practiced in a breeder flock 4.0
3. Define hatchability and fertility. Discuss briefly the factors that affect the fertility & hatchability of egg 8.0
4. What is a quality chick? Discuss the methods with which you can evaluate quality chick 8.0
5. State the events of embryonic development of chick and hatching failure 8.0
6. Discuss the selection and care of hatching egg 8.0
7. What is fumigation and hatchery wastage? Discuss the sanitary and hygienic management of an ideal hatchery 8.0

**Chattogram Veterinary and Animal Sciences University**

**M.S. in Dairy Science**

**(July- December semester) Final Examination-2023**

Course: Advanced Dairy Cattle Breeding (DCB 602)

Full Marks- 40; Time- 2.00 hrs

Date- 23/ 01/ 2024

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

1. a. What is breeding objective and selection criteria? How will you design and evaluate the breeding program? 5
- b. What is response to selection? Describe briefly the factors that control the response to selection program. 5
2. a. What do you mean by correlation among the traits? What are reasons for genetic correlation among the traits? Discuss elaborately. 5
- b. Do you think progeny testing is important for dairy cattle breeding? Justify your statement. 5
3. a. Describe the effect of inbreeding in dairy cattle production. 5
- b. List and briefly discuss managemental factors that affect herd fertility in an A.I. program. 5
4. a. What is breeding efficiency? How you can improve the breeding efficiency in a dairy herd? 5
- b. Why is synchronization of estrus in the donor and recipient vitally important? Write down the application of embryo transfer technology for dairy cattle improvement. 5
5. a. What do you mean by marker-assisted selection and genomic selection? Write down the advantages and disadvantages to use marker-assisted selection in dairy cattle breeding. 5
- b. Mention and narrate the strategies for dairy cattle breeding to ensure sustainable milk production in Bangladesh. 5

**Chattogram Veterinary and Animal Sciences University**

**Dept. of Dairy and Poultry Science**

**Final Examination July-December Semester/2023**

**MS in Dairy Science**

**Course: Advanced Dairy Cattle Production**

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

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

1. a) Can you identify and illustrate the mismanagement through analyzing the livestock and breeding register maintaining in a dairy farm? 06  
b) List the components in a modern dairy production system. 04
2. Discuss the biological framework of a heifer herd for achieving 1<sup>st</sup> calf within 24months. 10
3. a) Mention the current constrains of organic dairy farming in Bangladesh. 03  
b) Discuss the pre-requisites of organic dairy farming. 03  
c) Design a breeding programme in your dairy farm considering the cattle breeding policy and climatic condition of Bangladesh. 04
4. a) Discuss the procedure of forming primary milk producing co-operative society in Bangladesh. 04  
b) Illustrate the different methods of payment for raw milk in the world. 06
5. a) Mention the advantages and disadvantages in different arrangements of parlor milking. 05  
b) How will you improve the flavor of milk in your dairy herd? 05



Chattogram Veterinary and Animal Sciences University

Dept. of Dairy and Poultry Science

Final Examination July-December Semester/2023

MS in Dairy Science

Course: Dairy Farm Planning and Management

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

You are a recent graduate of CVASU has been joined in Nova 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 225 dairy cows aiming to get sufficient amount of loan from UCB bank, Khulshi branch. After calculation it was seen that the cost of land, land development, construction, equipments & machineries, dairy cow, preliminary farm operation, inflation & contingency, pre- production expenditure and interest during grace period were 77500000/=, 1500000/=, 32000000/=, 9500000/=, 45000000/=, 23800000/=, 6519000/=, 500000/= and 3977226/=, respectively. Please note that the cost of land, land development, preliminary farm operation, inflation & contingency, pre- production expenditure to be considered as equity. On the other hand cost of construction, equipments & machineries, dairy cow to be considered as bank loan. In addition to that, the following information are provided by the entrepreneur

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

Calculated detail of equal monthly installment (EMI):

MONTHS	EMI	INTEREST	PRINCIPAL REPAYMENT	OST PRINCIPAL
0				90825000
1	1,237,262	756875	480387	90344613
2	1,237,262	752872	484391	89860222
3	1,237,262	748835	488427	89371795
4	1,237,262	744765	492498	88879297
5	1,237,262	740661	496602	88382695
6	1,237,262	736522	500740	87881955
7	1,237,262	732350	504913	87377042
8	1,237,262	728142	509120	86867922
9	1,237,262	723899	513363	86354559
10	1,237,262	719621	517641	85836918
11	1,237,262	715308	521955	85314963
12	1,237,262	710958	526304	84788658
13	1,237,262	706572	530690	84257968

14	1,237,262	702150	535113	83722855
15	1,237,262	697690	539572	83183283
16	1,237,262	693194	544068	82639215
17	1,237,262	688660	548602	82090613
18	1,237,262	684088	553174	81537439
19	1,237,262	679479	557784	80979655
20	1,237,262	674830	562432	80417223
21	1,237,262	670144	567119	79850104
22	1,237,262	665418	571845	79278259
23	1,237,262	660652	576610	78701649
24	1,237,262	655847	581415	78120233
25	1,237,262	651002	586261	77533973
26	1,237,262	646116	591146	76942827
27	1,237,262	641190	596072	76346754
28	1,237,262	636223	601040	75745715
29	1,237,262	631214	606048	75139667
30	1,237,262	626164	611099	74528568
31	1,237,262	621071	616191	73912377
32	1,237,262	615936	621326	73291051
33	1,237,262	610759	626504	72664547
34	1,237,262	605538	631725	72032823
35	1,237,262	600274	636989	71395834
36	1,237,262	594965	642297	70753537
37	1,237,262	589613	647650	70105887
38	1,237,262	584216	653047	69452840
39	1,237,262	578774	658489	68794351
40	1,237,262	573286	663976	68130375
41	1,237,262	567753	669509	67460866
42	1,237,262	562174	675089	66785777
43	1,237,262	556548	680714	66105063
44	1,237,262	550876	686387	65418676
45	1,237,262	545156	692107	64726569
46	1,237,262	539388	697874	64028695
47	1,237,262	533572	703690	63325005
48	1,237,262	527708	709554	62615451
49	1,237,262	521795	715467	61899983
50	1,237,262	515833	721429	61178554
51	1,237,262	509821	727441	60451113
52	1,237,262	503759	733503	59717610
53	1,237,262	497647	739616	58977994
54	1,237,262	491483	745779	58232215
55	1,237,262	485268	751994	57480221
56	1,237,262	479002	758261	56721960
57	1,237,262	472683	764579	55957381
58	1,237,262	466312	770951	55186430
59	1,237,262	459887	777376	54409054
60	1,237,262	453409	783854	53625201
61	1,237,262	446877	790386	52834815

62	1,237,262	440290	796972	52037843
63	1,237,262	433649	803614	51234229
64	1,237,262	426952	810311	50423918
65	1,237,262	420199	817063	49606855
66	1,237,262	413390	823872	48782983
67	1,237,262	406525	830738	47952246
68	1,237,262	399602	837660	47114585
69	1,237,262	392622	844641	46269944
70	1,237,262	385583	851680	45418265
71	1,237,262	378486	858777	44559488
72	1,237,262	371329	865933	43693554
73	1,237,262	364113	873150	42820405
74	1,237,262	356837	880426	41939979
75	1,237,262	349500	887763	41052216
76	1,237,262	342102	895161	40157056
77	1,237,262	334642	902620	39254435
78	1,237,262	327120	910142	38344293
79	1,237,262	319536	917727	37426566
80	1,237,262	311888	925374	36501192
81	1,237,262	304177	933086	35568106
82	1,237,262	296401	940862	34627244
83	1,237,262	288560	948702	33678542
84	1,237,262	280655	956608	32721934
85	1,237,262	272683	964580	31757355
86	1,237,262	264645	972618	30784737
87	1,237,262	256539	980723	29804014
88	1,237,262	248367	988896	28815118
89	1,237,262	240126	997136	27817982
90	1,237,262	231817	1005446	26812536
91	1,237,262	223438	1013825	25798711
92	1,237,262	214989	1022273	24776438
93	1,237,262	206470	1030792	23745646
94	1,237,262	197880	1039382	22706263
95	1,237,262	189219	1048044	21658220
96	1,237,262	180485	1056777	20601443
97	1,237,262	171679	1065584	19535859
98	1,237,262	162799	1074464	18461395
99	1,237,262	153845	1083418	17377978
100	1,237,262	144816	1092446	16285532
101	1,237,262	135713	1101550	15183982
102	1,237,262	126533	1110729	14073253
103	1,237,262	117277	1119985	12953267
104	1,237,262	107944	1129319	11823949
105	1,237,262	98533	1138730	10685219
106	1,237,262	89043	1148219	9537000
107	1,237,262	79475	1157787	8379213
108	1,237,262	69827	1167436	7211777
109	1,237,262	60098	1177164	6034612

110	1,237,262	50288	1186974	4847638
111	1,237,262	40397	1196865	3650773
112	1,237,262	30423	1206839	2443934
113	1,237,262	20366	1216896	1227037
114	1,237,262	10225	1227037	0

Based on above mentioned scenario and information, answer the following questions. Figures in the right margin indicate full marks

1. Show the progress of the herd size from 1<sup>st</sup> year of farming to loan period. 05
2. Show the ratio of equity and loan. 05
3. Calculate the recurring expenditures during loan period. 15
4. Calculate the gross income of the farm during project period. 05
5. Forecast the annual income of the project during loan period. 10

Department of Dairy and Poultry Science  
Chattogram Veterinary and Animal Sciences University  
MS in Dairy Science July – December Semester Final Examination – 2023  
Course Title: Research Methodology (Theory)  
Course Code: RMD – 602 (T)

Time: 2 hours

Total marks: 40

**Answer any four (4) of the following questions. Split answers are 4X10=40 strongly discouraged.**

1. a) What are the methods for data collection? 5
- b) Describe the following terms - (Any two) 2.5X2 = 5
  - i) Dependent vs independent variable
  - ii) Extraneous variable
  - iii) Experimental unit
2. a) What is report? Describe the layout of a research report. 5
- b) State the contents of appendices in a research thesis. 5
3. Describe the following study designs – (Any two) 5X2 = 10
  - a) CRD
  - b) RBD
  - c) LSD
  - d) Factorial design
4. a) Define research process. Sketch the steps of the research process. 5
- b) Define research hypothesis. What are the characteristics of a hypothesis? 5
5. a) Briefly describe different basic types of research. 5
- b) What are the features of a good research design? 5

Department of Dairy and Poultry Science  
Chattogram Veterinary and Animal Sciences University  
MS in Dairy Science July – December Semester Final Examination – 2023  
Course Title: Market Milk Production and Processing (Theory)  
Course Code: MMP – 602 (T)

Time: 2 hours

Total marks: 40

**Answer any four (4) of the following questions. Split answers are strongly discouraged. 4X10=40**

1. a) What do you mean by 'Milk shed'? Describe the principle and methods of cooling of milk. 5
- b) Briefly describe the factors affecting the composition of milk. 5
2. a) Tabulate the quality control tests for milk and their significance. 5
- b) What is clarifier slime? Describe its composition. 5
3. a) Compare the methods of measurement of milk. Describe bactofugation of milk. 5
- b) What are the methods of standardization? How much kg each of cream containing 28% fat and milk containing 3% fat will be required to make 500 kg of a mixture testing 4 % fat? 5
4. a) State the pressure and temperature of different mediums that should be maintained in the HTST pasteurization system. 5
- b) Tabulate the characteristics of different types of milk samplers. 5
5. a) State the policies for buying and collecting raw milk. 5
- b) State the defect of market milk with their causes and prevention. 5

**Chittagong Veterinary and Animal Sciences University**

**MS July-December Semester 2023 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) What is milk microbiology? What is the significance of dairy microbiology? **3.0**
- b) What is the molecular method of microbial identification? Briefly describe it. **6.0**
- c) Illustrate the significance of probiotics in human health. **1.0**
  
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) What are the three methods of genetic transfer in bacteria? **2.0**
- b) Briefly describe the gene expression of different types of lactic acid bacteria. **3.0**
- c) What are the mechanisms of antibiotic resistance in dairy products? **3.0**
- d) What are the disadvantages of lactic acid fermentation in food? **2.0**
  
4. a) What is dairy starter culture? What are the types of starter culture in dairy industry? **2.0**
- b) What is the process of pure culture? **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). HACCP
  - b). Genetics of lactic acid bacteria
  - c). Common microbial defects & their control of cheese
  - d). Culture media used in dairy microbiology
  - e) LAB plasmids
  - f). Microbiological standards of Grade-A milk and milk products.