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Chittagong Veterinary and Animal Sciences University
DVM 4th Year 2nd Semester Final Examination, 2010
Course Title: Agricultural Extension (Theory)
Course Code: AEX-402
Full Marks: 55, Time: 3 Hours

(Figures in the right margins indicate full marks. Answer 3 (three) questions from each section of which Question No. 1(One) is compulsory. Use separate answer script for each section.)

Section-A

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|-------|---|-----|
| 1. a) | Explain the terms 'extension, education and agricultural extension. | 3.0 |
| b) | Briefly discuss the principles of agricultural extension. | 7.0 |
| 2. a) | Define innovation and diffusion. State different types of innovation with examples. | 3.0 |
| b) | Describe in brief the characteristics of an innovation. | 6.0 |
| 3. a) | What is an extension organization? | 2.0 |
| b) | Classify leaders with suitable examples. | 3.0 |
| c) | Describe the roles of local leaders in veterinary extension. | 4.0 |
| 4. a) | What do you mean by extension program development and program planning? | 2.0 |
| b) | Describe the steps in extension program planning | 7.0 |

Section-B

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|-------|--|------------|
| 5. a) | What is communication? Enlist the basic elements in the communication process. | 2.0 |
| b) | Mention the importance communication in veterinary extension services. | 4.0 |
| c) | State the characteristics of a good communicator. | 3.0 |
| 6. | State the decision stage in the innovation decision process with its consequences. | 9.0 |
| 7. a) | Define need and motivation. | 2.0 |
| b) | Briefly describe the Maslow's need theory of motivation. | 4.0 |
| c) | How can you motivate farmers in Bangladesh. | 3.0 |
| 8. | Write the short notes on the following (any three): | (3x3)= 9.0 |
| a) | Method demonstration | |
| b) | Participatory Rural Appraisal (PRA) | |
| c) | Communication fidelity | |
| d) | Laws of learning | |

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Chittagong Veterinary and Animal Sciences University
DVM 4th Year 2nd Semester Final Examination, 2010
Course Title: Zoo and Lab. Animal Medicine (Theory)
Course Code: ZAM-402
Full Marks: 55, Time: 3 Hours

(Figures in the right margin indicate full marks. Answer 3 (three) questions from each section of which Question No. 5 is compulsory. Use separate answer script for each section)

Section-A

1. a) Enlist the Zoo's and Safari Parks in Bangladesh. Write down the scopes of zoo vets in Bangladesh. 3.0
- b) What is wildlife medicine? What are the roles of veterinarian for conservation of endangered wildlife in Bangladesh? 3.0
- c) Briefly describe different restraining methods used in zoo's and Safari Parks in Bangladesh. 3.0
2. a) Mention in a tabular form the etiology, clinical signs and therapy of 5 (five) bacterial diseases in reptiles. 3.0
- b) Describe the ulcerative stomatitis of white Rhinoceroses in brief. 3.0
- c) Write down the precautionary measures taken during transfer or shipment of dangerous wild animals. 3.0
3. a) What do you mean by emerging and reemerging diseases of zoo animals? Enlist five emerging and reemerging diseases of zoo animals. 4.0
- b) Name zoonotic diseases of nonhuman primates. Describe the general principles of prevention and control of such diseases under zoo condition. 5.0
4. a) Mention three major viral diseases of Royal Bengal Tiger with transmission, diagnosis and treatment. 3.0
- b) What do you understand by the term *Mycobacterium avium* Complex (MAC) in tapir? Describe its clinical signs, postmortem lesions, diagnosis and treatment. 6.0

Section-B

5. a) Suppose you are going to be appointed as a Researcher and Conservation Curator in Wildlife Reserver, Singapore (WRS), what will be the major responsibilities for developing future project both ex-stiu and in-situ condition? 5.0
- b) Describe the etiology, clinical signs, postmortem lesions and treatment of coccidiosis in snake. 3.0
- c) How will you treat a diamond python of 5 kg body weight is suffer from Ranifer infestation? 2.0
6. a) Mention the name of upper respiratory tract diseases of the Royal Bengal Tiger. Write down the etiology, route of infection, clinical signs, diagnosis and treatment of Feline Pneumonitis of the Royal Bengal Tiger. 3.0
- b) Write down the etiology, clinical signs, treatment, prevention and control of pox in Asian Elephant (*Elephas maximus*). 3.0
- c) Describe the clinical signs, postmortem lesions, treatment and control of Salmonellosis in Juvenile Kangaroo. 3.0
7. a) How will you reduce the incidence of cannabolism in crocodiles at Reptiles Farm, Valuka, Mymensingh? 2.0
- b) Write down the etiology and clinical findings of crop impaction in a five month old Pheasant. How will you handle the case? 2.0
- c) Describe the etiology and treatment of clubbed feet in Ostrich 2.0
- d) Describe the etiology, treatment and control of pouch disease in Koala. 3.0
8. Write down the prescription of the followings: 1.5x6=9.0
 - a) A Wallaby of 60 kg body weight suffering from candidiasis.
 - b) An adult Hullock Gibbon of 8 kg body weight suffering from tuberculosis (TB).
 - c) A rabbit of 300 gm body weight suffering from snuffles.
 - d) An adult Emu of 60 kg body weight suffering from fowl typhoid.
 - e) A parakeet of 100 gm body weight suffering from chlamydophillosis.
 - f) A Zebra of 300 kg body weight suffering from glanders.

Chittagong Veterinary and Animal Sciences University
DVM 4th Year 2nd Semester Final Examination, 2010
Course Title: Reproductive Diseases and Obstetrics (Theory)
Course Code: RDO-402
Full Marks: 70, Time: 3 Hours

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(Figures in the right margin indicate full marks. Answer 5 (five) questions from each section. Use separate answer script for each section)

Section-A

1. Enumerate the hormones of hypothalamus, pituitary and ovaries. Briefly describe the hormonal regulation of oestrus cycle in cows. 7.0
2. a) Define oestrus. Mention signs and duration of oestrus in cows, mares, ewes and bitches. 3.0
 b) What are the causes of low oestrus detection rates in a dairy herd? How it is possible to improve the oestrus detection rates? 4.0
3. Write down the line of treatment and management of the followings: 7.0
 i) Anoestrous in a post partum cow ii) Persistent CL in a bitch
 ii) Puerperal metritis in an ewe iv) Uterine inertia in a bitch.
4. What are the signs approaching parturition in cows? Briefly describe the 1st and 2nd stages of parturition in cows and mare. 7.0
5. Describe any two of the followings: 3.5x3=
 i) Induction of parturition in cows, mares, bitches and queen cats. 7.0
 ii) Process of spermatogenesis in a bull
 iii) Puberty in a heifer
6. a) How will you proceed to diagnose a case of dystocia in livestock species? 2.0
 b) Mention the obstetrical operations. Write down the procedure of correction and delivery of fetus due to i) lateral deviation of head and ii) dog sitting position in a cow 5.0

Section-B

7. a) Enlist the measures of puberty in a bull. 1.0
 b) Briefly describe the hormonal regulation of puberty in a female cow. 3.0
 c) Illustrate the common factors influence the onset of puberty in a female cow with special emphasis on the role of photoperiod in a doe. 3.0
8. a) Enumerate the methods employed to diagnosis pregnancy in farm animals. 1.0
 b) Briefly describe the cost effective method of pregnancy diagnosis in the bovine. 3.0
 c) Discuss the common management factors affecting fertility of dairy cows in commercial dairying in Chittagong. 3.0
9. a) Enumerate the causes of early embryonic mortality in a dairy cow. 1.0
 b) Describe the common genetic defects in a dairy calf. 3.0
 c) Enlist the sequelae of early embryonic death in a dairy cow. 3.0
10. a) Describe the thermoregulation of testis in a breeding bull. 3.0
 b) What are the relationships between pituitary gland, hypothalamus and testis in regards to hormone regulation? 4.0
11. a) Briefly write down the advantages and disadvantages of AI in a dairy cow. 2.0
 b) Describe the maternal recognition of pregnancy in cows and ewes. 5.0
12. Write down the short note on any two of the followings: 3.5x2=
 a) Uterio-vaginal prolapse in a cow 7.0
 b) Retained fetal membrane in a dairy cow
 c) Caesarean section in a bitch

Chittagong Veterinary and Animal Sciences University
DVM 4th Year 2nd Semester Final Examination, 2016

Course Title: Veterinary Public Health (Zoonosis and Food hygiene) (Theory)

Course Code: VHP-402

Full Marks: 70, Time: 3 Hours

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(Figures in the right margin indicate full marks. Answer 3 (three) questions from each section of which Question No. 1 and 5 are compulsory. Use separate answer script for each section.)

Section-A

1. a) Define and classify zoonoses according to the causal agents. 3
b) Name the important bacterial, viral, fungal and protozoal zoonotic diseases prevalent in Bangladesh. 8
2. a) What is food-borne disease outbreak? Describe the major categories usually considered for developing a case definition of a food-borne outbreak. 3
b) Describe the objectives of investigation of food-borne disease outbreaks. 3
c) Mention the principles that are involved in the prevention of *Salmonella*-induced food-borne infection. 3
d) Discuss briefly the principles one must follow for planning an abattoir. 3
3. a) Discuss briefly the information one has to collect during postmortem examination of a carcass. 6
b) Describe the CAC judgment symbols for antemortem and postmortem inspections of animals. 3
c) Give your judgment for carcasses affected with Black Quarter, Rabies and Tuberculosis. 3
4. a) What are the essential points to be considered during slaughtering of animals? 2
b) Describe the Muslim method of slaughtering with its merits and demerits. 6
c) Discuss shortly the reactions of animals to stress. 4

Section-B

5. a) Define veterinary public health. What is the importance of veterinary knowledge in public health aspects? 3
b) Write down the procedures of treatments for abattoir effluents. State the strategies to control rabies in Bangladesh. 6
c) How does liver weight loss during transport of animals? 2
6. a) What are the factors usually affect the heat resistance of microorganisms in foods? 3
b) Describe the feeding and watering of animals prior to slaughter. 4
c) In tabular form, list various chemical food preservatives with maximum tolerance level and organisms affected. 5
7. a) Along with functions name different agencies concerned with international food commerce. 3
b) State the bacterial and fungal spoilage of eggs. 5
c) Mention the functions of personnel involved in food-borne disease outbreak investigation. 4
8. a) Define stunning. With your logics illustrate the most appropriate method of stunning of small animals. 6
b) Describe the different types of defects found in heated can foods. 4
c) Write short note on HACCP. 2

Chittagong Veterinary and Animal Sciences University
DVM 4th Year 2nd Semester Final Examination, 2010
Subject: Large Animal Medicine-II (Theory)
Course Code: LAM-402
Full Marks: 75, Time: 3 Hours

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(Figures in the right margin indicate full marks. Answer 3 (Three) questions from each section of which question No. 1 and 5 are compulsory.)

Section-A

1. a) Write down the clinical signs of acute and chronic form of fascioliasis. 5.0
b) List the four parasitic diseases with their causal agents where generalized edema/bottle jaw is found. 2.0
c) How will you diagnose and treat a cow of 350 kg body weight affected with fascioliasis? 4.0
2. a) Write down the diagnostic procedure and treatment of the following diseases (any three) 3x4= 12.0
a) Stomach worm infestation in a calf of 50 kg body weight.
b) Ring worm disease in a calf
c) Nasal schistosomiasis in a cow of 300 kg body weight.
d) Theileriasis in a bull of 250 kg body weight.
3. a) Enlist six hemoparasitic diseases of large animal. 2.0
b) Write down the diagnostic procedure of hemoparasitic disease. 3.0
c) Write down the clinical signs and treatment of babesiosis in cow. 5.0
d) How will you differentiate haemoglobinuria from haematuria? 2.0
4. Write short notes on any 3 (three) of the followings: 3x4= 12.0
a) Hydatidosis b) Dourine c) Tick paralysis d) Contagious bovine pleuropneumonia

Section-B

5. a) Enlist the mycoplasmal, chlamydial, rickettsial and fungal diseases of cattle and horse with etiology. 6.0
b) Enlist 10 anthelmintics with generic dose and atleast one trade name, composition and indications. 5.0
6. a) What are the common risk factors of myiasis? How can you manage a myiasis infested patient? 4.0
b) What are the common economic importance of sarcosystosis, neosporiosis and toxoplasmosis? How can you prevent them? 4.0
c) What are the clinical significances of tick in animals? How can you prevent it? 4.0
7. a) What are the similarities and dissimilarities between liver fluke and stomach fluke infestations? 4.0
b) Name the most important parasitic disease of horse. What are the sings of it? How can you treat the patient? 4.0
c) Write short note on "Swimmer's itch". 4.0
8. a) Enlist the larval tapeworm infestations in cattle with affected organs. What are their economic importances? 4.0
b) Why helminthic disorders mostly seen at weaning age? Write down the common sings and treatment of taeniasis in cattle. 4.0
c) Write down the etiology, clinical sings and treatment of "Q-fever". 4.0

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Chittagong Veterinary and Animal Sciences University
DVM 4th Year 2nd Semester Final Examination, 2010
Course Title: Large Animal Medicine (Theory)
Course Code: LAM-402
Full Marks: 70, Time: 3 Hours

(Figures in the right margin indicate full marks. Answer 3 (**three**) questions from each section of which Question No. 1 and 5 are compulsory. Use separate answer script for each section)

Section-A

1. a) Enlist the mycoplasmal and chlamydial diseases in animals with specific etiology. 3.0
- b) Clinically differentiate haemonchosis from hook worm disease. 3.0
- c) A bull of 200 kg body weight suffering from gray white circular crusty lesions with pityriasis and alopecia at body coat. What is your presumptive diagnosis? Write a prescription for the patient. 3.0
- d) Name at least five parasites cause strongylosis in horse. 2.0
2. a) How can you diagnosis, treat and prevent ascariasis in buffalo calf? 5.0
- b) Write down the differential diagnosis of CBPP. 3.0
- c) Write down the line of treatment and control of CBPP. 4.0
3. a) What is the most important parasite cause of high case fatality rate in buffalo calf? Why? 5.0
- b) How will you clinically diagnose chronic fascioliasis in cattle? Write down the line of treatment of it. 4.0
- c) Name the nematodal disease causing extra-intestinal habitation or migration in animal body. 3.0
4. a) Write down the epidemiology, causal agent, transmission and clinical signs of coccidiosis in cattle. 6.0
- b) Define and classify myiasis. Write down the causal agent, clinical signs and treatment of nasal myiasis. 6.0

Section-B

5. a) Name the rickettsial and hemoprotozoan diseases in animals with causal agent. 3.0
- b) Enlist the parasitic diseases causing edema and anemia in cattle separately. 3.0
- c) Clinically differentiate different types of mange in cattle. 5.0
6. a) Enlist the tick-borne diseases in animal. What are the common signs of tick infestation? 4.0
- b) Clinically differentiate anaplasmosis from babesiosis. 4.0
- c) Differentiate dourine from surra in mare. 4.0
7. a) What is dermatophyte? Describe the etiology, diagnostic procedure and treatment of ring worm infestation in cattle. 6.0
- b) Describe briefly the transmission, clinical signs and line of treatment of nasal granuloma in buffalo. 6.0
8. Write short notes on any three of the followings: 3x4= 12.0
 - a) 'Q' fever
 - b) Hump sore in Jabu cattle
 - c) Eye worm infestation in cattle
 - d) Swimmer's itch

Chittagong Veterinary and Animal Sciences University
DVM 4th Year 2nd Semester Final Examination, 2010
Course Title: Veterinary Jurisprudence (Theory)
Course Code: VJR-402
Full Marks: 35, Time: 2 Hours

(Figures in the right margin indicate full marks. Answer 2 (two) questions from each section of which Question No. 5 is compulsory. Use separate answer script for each section)

Section-A

1. a) Define veterinary jurisprudence. What are the objectives of veterinary jurisprudence? 3.0
b) What is the significance of veterinary ethics? Write down the principles of ethics for a referral case. 4.0
c) How will you differentiate gun shot wound and incised wound. 2.0
2. a) List the common offences against animals. 1.0
b) Describe the signs of death in animals. 4.0
c) Write down the oath of a veterinarian. 4.0
3. a) Describe the common frauds which are adopted in sale of cattle, meat and milk. 4.0
b) Why animal registration is important? Write in brief on future prospects of animal insurance in Bangladesh. 5.0

Section-B

4. a) Write down the "Livestock Importation Act" and the "Cattle Trespass Act" in brief. 6.0
b) What do you mean by animal welfare? What are the reasons for being concerned about animal welfare? 3.0
5. a) Write down the procedure of writing veterolegal reports. 4.0
b) Describe the evidence recording procedure in brief. 4.0
6. Write short notes on any three of the followings: 3x3= 9.0
 - i) Criminal courts
 - ii) Liability
 - iii) Bestiality
 - iv) Lightning and Electrocution

Chittagong Veterinary and Animal Sciences University
DVM 4th Year 2nd Semester Final Examination, 2010
Course Title: Hides, Skins and Wool Technology (Theory)
Course Code: HWT-402
Full Marks: 55, Time: 3 Hours

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(Figures in the right margins indicate full marks. Answer 3 (three) questions from each section of which Question No. 5(five) is compulsory. Use separate answer script for each section.)

Section-A

1. a) What are the different virtues of wool fiber? 2.0
b) Shortly describe about the “carbonizing” and “weaving, knitting/felting”. 3.0
c) Describe shortly about the different factors that affect the price of wool. 4.0
2. a) Mention the sequences of tanning process of cow hide, sheep skin and pig skin. 2.0
b) Define tensile strength. What is the importance of it? 3.0
c) Why corium is known as derma or true skin? Explain. 4.0
3. a) Write down the name of different animal & bird species whose hides and skins are tanned regularly or occasionally in different parts of the world. 2.0
b) Write down the biological functions of hide/skin. Mention the reasons for the putrefaction of raw hides and skins. 3.0
c) Mention the flaying techniques of small animals. What do you mean by “cased skin”? 4.0
4. a) Mention the role of a veterinarian to improve the quality of hides and skins of Bangladesh contributing as a national income source. 2.0
b) Why arsenication for dry hide is important? Shortly describe about the degree of drying. 3.0
c) State shortly the different methods of curing of hides and skins. 4.0

Section-B

5. Define following terms (any ten): 1x10=10
i) Purity, ii) Curing, iii) Country hides, iv) Pickling, v) Suint, vi) Character, vii) Butcher cuts, viii) Upholstery leather, ix) Worsted, x) Syntans, xi) Spinning count, xii) Condition.
6. a) Write a short note about the “mohair”. 2.0
b) Shortly describe about the different characteristics of wool fiber. 3.0
c) Write down the importance of sheep rearing in Bangladesh. How can you improve the wool quality of our native breeds of sheep? 4.0
7. a) How and why wool act as a fire extinguisher? 2.0
b) What is the economic importance of medullary layer of wool fibers? 3.0
c) “Wool is characteristically different from all other natural fibres” why? Justify yourself. 4.0
8. a) Describe in brief the different types of protein found in the raw hide or skin. 2.0
b) State the physical properties of hides and skins. 3.0
c) Compare microscopically between cattle and buffalo hide. 4.0

Chittagong Veterinary and Animal Sciences University
DVM 4th Year 2nd Semester Final Examination, 2010
Course Title: Metabolic Diseases (Theory)
Course Code: MTD-402
Full Marks: 70, Time: 3 Hours

(Figures in the right margin indicate full marks. Answer 3 (**three**) questions from each section of which Question No. 1 and 5 are compulsory. Use separate answer script for each section)

Section-A

1. a) Define metabolic diseases and production diseases with example 4.0
b) List the macro and micro elements essential for animal body 4.0
c) What is CMPT? Write in short the procedure of CMPT. 3.0
2. a) What do you mean by parturient paresis? How and why it is occurred in milking cow? 5.0
b) Write down the epidemiology and clinical signs of milk fever in high yielding dairy cow. 7.0
3. a) Which poisoning is more frequently occurred in beef fattening farm? Write down its epidemiology, clinical findings and line of treatment. 6.0
b) How cyanide poisoning is occurred in animal? How would you diagnose and treat the case? 6.0
4. a) What is acetonemia? Do you think acetomenia and ketonemia are the same disease in ruminants? How many volatile fatty acids (VFA) are produced in carbohydrate digestion and how many of them are anti-ketogenic? 5.0
b) Briefly describe the clinical manifestations, line of treatment and prevention of acetomenia in cattle. 7.0

Section-B

5. a) What are the synonyms of hypomagnesemia? Do you think, it is a metabolic disease? Justify your answer if yes. 3.0
b) Briefly describe the causes, clinical manifestations and line of treatment of hypomagnesemia in cattle. 8.0
6. a) What is myopathy? How vitamin-E and selenium prevent it in growing animals? 5.0
b) Briefly describe the etiology, clinical manifestations, diagnosis and treatment of azoturia in race horse. 7.0
7. a) What is mineralization? What are the roles of Vitamin-D in Ca mineralization? 5.0
b) Briefly describe the etiology, clinical manifestations, line of treatment and prevention of rickets in calves. 7.0
8. Write short notes on any three of the followings: 4x3= 12.0
 - a) Falling disease in cattle
 - b) Pregnancy toxaemia in ewe
 - c) Allergic dermatitis in heifer
 - d) Diabetic mellitus in the dog
 - e) Fibrous osteodystrophy in calf

Chittagong Veterinary and Animal Sciences University
DVM 4th Year 2nd Semester Final Examination, 2010
Course Title: Livestock Marketing (Theory)
Course Code: LMR-402
Full Marks: 55, Time: 3 Hours

(Figures in the right margins indicate full marks. Answer 3 (three) questions from each section of which Question No. 3(Three) from section A and 6(six) from section B is compulsory. Use separate answer script for each section.)

Section-A

1. a) Define market and marketing. Write the characteristics of a good development market. 4.0
b) Briefly discuss the role of marketing in the economic development of Bangladesh. 5.0
c) Why the marketing of livestock products is costly and productive? Explain. 3.0
2. a) Distinguish between the characteristics of farm and industrial products. 4.0
b) Briefly discuss the functions of livestock marketing in Bangladesh. 5.0
c) Write the necessities of scientific marketing of farm products. 3.0
3. a) Define marketing cost. Why we study marketing cost? 3.0
b) What factors affect the cost of livestock marketing in Bangladesh. 4.0
c) How the cost of farm products marketing cost can be reduced? 4.0
4. a) Define marketing system. Write the components of marketing system. 3.0
b) Briefly discuss the cattle marketing system in Bangladesh. 6.0
c) State the features of a good marketing system. 3.0

Section-B

5. a) Write short notes on (any four) 3x4 =12.0
i. Marketing Approach; ii. Marketing MIX; iii. Marketing Research
iv. Price Spread, v. Marketing Margin.
6. a) Define marketing channel. What factors affect the choice of marketing channel? 4.0
b) Briefly discuss the different types of marketing middlemen. 5.0
c) Do you think middlemen are always act as a parasite in marketing. 2.0
7. a) Distinguish between whole selling and retailing. Discuss the functions of whole seller. 5.0
b) Write the characteristics of retailing of livestock products. 3.0
c) Do you think retailing of livestock products is efficient? 4.0
8. a) What do you mean by marketing efficiency? What measures do you consider to increase the marketing efficiency? 4.0
b) Write the importance of studying marketing margin. 3.0
c) Discuss the advantages of co-operative marketing of livestock products in Bangladesh. 5.0

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Chittagong Veterinary and Animal Sciences University
DVM 4th Year 2nd Semester Final Examination, 2010
Course Title: Animal Breeding (Theory)
Course Code: ABR-402
Full Marks: 55, Time: 3 Hours

(Figures in the right margin indicate full marks. Answer 3 (three) questions from each section of which Question No. 1 is compulsory. Use separate answer script for each section)

Section-A

1. a) What do you mean by genetic improvement of livestock? Suppose you are asked to develop a dairy breed using Red Chittagong Cattle genetic resources- describe the procedural steps. 7
b) What is breed complementation? –Explain. 3

2. a) What is inbreeding co-efficient? How the rate of inbreeding can be estimated? 4
b) How will you develop an inbred line of poultry in Bangladesh? 5

3. a) What is heterosis? How can you estimate the hybrid vigor for economic traits in cattle? 5
b) Describe about the genetic causes of heterosis. 4

4. a) Define biotechnology. List different biotechnological approaches used in the field of livestock improvement in Bangladesh. 2
b) Differentiate X and Y chromosome bearing spermatozoa. 3
c) Briefly discuss about the flow cytometry technique of sperm separation. 4

Section-B

5. a) Mention the advantages and disadvantages of embryo transfer programme. 3
b) Write down the embryo transplantation procedure of cow. 6

6. a) Mention the steps to implement a comprehensive cattle breeding policy in Bangladesh. 2
b) Describe the current breeding policy for dairy cattle genetic improvement in Bangladesh. 5
c) Which breed combinations are more adoptable in Bangladesh and why? 2

7. a) What is “Nucleus breeding system”? Give outline for a long term ONBS involving farmer’s community for dairy development in Bangladesh. 6
b) What should be the criteria for a recording system? Explain the importance of adequate record keeping as it relates to herd reproductive performance. 3

8. Write short notes on (any three) 3×3=9
 - a) Crossbreeding in dairy cattle.
 - b) Semen preservation.
 - c) Estrus synchronization in a dairy herd.
 - d) In-Vitro Fertilization (IVF) technique.