

Chittagong Veterinary and Animal Sciences University
Department of Anatomy and Histology
MS in Anatomy January-June Semester Final Examination 2016
Course Title: Cell Biology and Veterinary Histology, Course Code: CVH-601
Full Marks-40, Time: 2 hour

Answer any **eight** questions. Each question has equal mark. (8 x 5 = 40)

1. Briefly describe the ultra-structural features of a typical cell membrane with diagram. Write down the difference between rER and sER.
2. What do you mean by microvilli, cilia and stereocilia. Briefly describe the cellular organelles or components sequentially responsible for protein synthesis of a typical eukaryotic cell.
3. Briefly describe the intercellular junctions among cells. Name the lining epithelium of the following organs- a. Parietal layer of Bowman's capsule, b. Inner layer of artery, c. Central canal of spinal cord, d. Distal convoluted tubule, e. Outer surface of the ovary.
4. Briefly describe various stages of mitosis with diagram.
5. Draw and label the Haversian system. Describe the morphology and functions of plasma cell, mast cell and fibroblast.
6. Describe the mechanism of contraction process of skeletal muscle. Draw and label a sarcomere before and after contraction.
7. Draw and label a typical mammalian neuron. Classify neurons according to their morphology and functions with diagram. Distinguish between the followings- a. Oligodendrocytes and Schwann cells, b. Astrocytes and microglia.
8. Draw and label the histological structure of a nephron. Describe the histology of juxta-glomerular apparatus.
9. What are the different parts of the hypophysis? Describe the histology of the adenohypophysis of the pituitary gland.
10. Define perisinusoidal space. Describe the histological structure of liver.
11. Briefly describe the histological structure of a seminiferous tubules. Differentiate the histological structure of prostate gland and seminal vesicle.
12. Briefly describe the histology of the ovarian cortex giving special emphasis on ovarian follicles.

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Department of Anatomy and Histology
Chittagong Veterinary and Animal Sciences University
MS in Anatomy
January –June Semester Final Exam'2016
Subject: Anatomy of Immune System
Course Code: AIS -601
Total marks: 40

Answer any 4 (four) questions from the followings:

1. a. What is mucosa associated lymphoid tissue (MALT)? Describe postnatal growth and development of MALT in the GI tract of Deshi chicken of Bangladesh. 05
- b. What do you mean by the primary physiological barriers? How do they act as non-specific defenses? 05
2. a. What are the sub-populations of T-cells? How do they involve in immune system of the body? 06
- b. Draw and label the structure of antibody. 04
3. a. What are the organs and tissues of immune systems of dog? Describe the anatomy of lymphnode and tonsil in dog. 05
- b. Describe erythropoiesis in details. 05
4. a. List the primary and secondary lymphoid organs of chicken. Describe the anatomy of any one from each group. 05
- b. Describe the roles of B-cells in humoral immunity. 05
5. a. What is phagocytosis? Describe different types of phagocytes. 05
- b. Describe the ways to boost our immune system. 05

Department of Anatomy and Histology

Faculty of Veterinary Medicine

Chittagong Veterinary and Animal Sciences University

MS in Anatomy (January-June, 2016)

Course title: Developmental Anatomy (Theory)

Course Code: DAN-601

Total Marks 40

Time: 2 hours

Answer any eight (8) questions

Marks 5×8=40

- 1 Draw and label the different phases of fertilization. 5
2. What is implantation? Describe the mechanism of implantation of blastocyst in uterus 5
3. Explain the process of formation of identical and non-identical twin. 5
4. What is somite? List the derivatives of Mesoderm. 5
5. What is amnion? How the amniotic cavity is formed. 5
6. Briefly describe the development of coelom. 5
7. Briefly describe the development of respiratory system with neat diagram. 5
8. Describe the role of Leydig Cells for the embryonic development of male and female genital system. 5
9. Describe the early formation of Nervous System. 5

Chittagong Veterinary and Animal Sciences University
Department of Physiology, Biochemistry and Pharmacology
MS in Pharmacology January-June Semester Final Examination-2015
Course Title: Food Toxicology and Public Health

Course Code: FTP-601

Total Marks: 40

Time: 2 hours

Answer the following questions (any four):

1.
 - a. Differentiate food safety and food security. 2
 - b. Write in brief the historical background of Food Toxicology and Public health. 3
 - c. Write down the sources and basic symptoms of food poisoning. How does food poisoning spread? 5

2.
 - a. Define food hazard? What are the types of food hazard? Describe emerging challenges in food security in Bangladesh. 5
 - b. What are the food safety basic laws? Write a report regarding a proposed amendment of certain sections of the Bangladesh Pure Food Ordinance, 1959 (Ordinance No. LXVIII of 1959). 5

3.
 - a. What is food adulteration? How does livestock meat adulterated? Write down the procedure of a multiplex-PCR-based approach for reliable identification of livestock meat in Bangladesh. 5
 - b. Why and how does fish adulterated with formalin? What types of pesticides are used in dried fish and how it should be avoid? 5

4.
 - a. Differentiate synthetic and natural food colour. Write down the classification of food colours. 5
 - b. How fresh milk is usually adulterated and how artificial milk is being prepared? 5

5. Write down short note (any two) 2 x 5 = 10
 - a. Food poisoning bacteria
 - b. Risk analysis used in Food safety
 - c. Aquatic Biotoxins

Chittagong Veterinary and Animal Sciences University
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Chittagong Veterinary and Animal Sciences University
Department of Physiology, Biochemistry and Pharmacology
MS in Pharmacology January-June Semester Final Examination-2015
Course Title: Chemotherapy
Course Code: CHT-601
Total Marks: 40
Time: 2 hours

Answer the following questions (any four):

1.
 - a. Define chemotherapeutic triangles and how does chemotherapy and chemotherapeutic act on host body? 5
 - b. Write down the history, biosynthesis, mode of action, activity, induction of resistance of Teixobactin. 5

2.
 - a. What is herbal drug? Write down the medicinal herbs diversity, their appropriate collection, utilization and conservation. 3
 - b. Define drug residues. Write down the antibiotic determination methods from poultry tissues. 3
 - c. How will you interpret TLC result? 4

3.
 - a. What is Endocrine and Immune Pharmacology. Write down the drugs for oestrus synchronization, cystic ovary and pyometra in cow with dose and route. 5
 - b. Define fluid therapy. How will you diagnose and treat a dehydrated Milk fever case of a cow? 5

4.
 - a. Define Pharmacy, Pharmacodynamics and Pharmacokinetics. 3
 - b. Classify antifungal drugs with their mode of action, contraindication, toxicity in tabular form. 3
 - c. What is Carn icterus and Stevens Joint Syndrome? How will you avoid crystaluria? 4

5.
 - a. Are Sulphonamides bactericidal or bacteriostatic? 1
 - b. In what circumstances are Quinolones contraindicated in companion animals? 3
 - c. What is a simple way to detect early signs of renal damage caused by aminoglycoside use? 3
 - d. Penicillins are generally safe, but they occasionally cause death in a treated animal-How does this happen? 3

January-June MS in Pharmacology Final Examination-2015
Department of Physiology, Biochemistry and Pharmacology
Faculty of Veterinary Medicine
Chittagong Veterinary and Animal Sciences University
Course Title: General Toxicology
Course code: GTL-601
Total Marks: 40; Time: 2.00 hours

Answer any 4 (Four) Questions from the following:

- Q1. a.** Define Toxicology and Therapeutic Index. Briefly describe the branches of Toxicology. 5
- b.** Differentiate poison from toxin. Classify toxicant on the basis of target organ, and toxicity potentials. 5
- Q2. a.** Briefly describe the measures of toxicity. 4
- b.** Briefly describe the general treatment of a poisoning case. 6
- Q3. a.** Define and classify antidote with examples. Define universal antidote. 5
- b.** What are factors involved in nitrate poisoning? How will you diagnose and treat nitrate poisoning in livestock. 5
- Q4. a.** Write down the mode of action, diagnosis and treatment of acute arsenic poisoning in cattle. 5
- b.** What is Alkali disease? Write down the mode of action, diagnosis and treatment of Alkali disease in poultry. 5
- Q5.** Write short notes on (any four) 2.5X4= 10
- a. Common salt poisoning; b. Lead poisoning; c. Fluoride poisoning;
d. Teart disease; e. Scope of toxicology

January-June MS in Pharmacology Final Examination-2015
Department of Physiology, Biochemistry and Pharmacology
Faculty of Veterinary Medicine
Chittagong Veterinary and Animal Sciences University
Course Title: General Pharmacology
Course code: GPH-601
Total Marks: 40; Time: 2.00 hours

Answer any 4 (Four) Questions from the following:

- Q1. a.** Differentiate drug from medicine. Classify drugs based on source and therapeutic indications. **5**
- b.** What is the function of biotransformation? Briefly describe the drug toxicity. **5**
- Q2. a.** Define Biological half life, Bioavailability, Agonist and Antagonist. **5**
- b.** Briefly describe the branches of Pharmacology. **5**
- Q3. a.** Define and classify clinical pharmacology. Differentiate therapeutic from chemotherapeutics. **5**
- b.** Define and classify drug incompatibility. Briefly describe the adverse drug reactions. **5**
- Q4. a.** Briefly describe the factors those modify the drug effects and drug dose. **5**
- b.** Briefly describe the renal clearance and total body clearance of drugs. **5**
- Q5.** Write short notes on (any four) **2.5X4= 10**
- a. Pharmacokinetics; b. Pro-drug; c. Pharmacotherapeutics;
d. Drug accumulation; e. Routes of administration of drug

Chittagong Veterinary and Animal Sciences University
MS in Physiology January-June Semester Final Examination 2015
Department of Physiology, Biochemistry and Pharmacology
Course Title: Avian Physiology
Course Code: AVP-601
Full Marks: 40
Time: 2 hours

Figures in the right margin indicate full mark. Answer any 4 (FOUR) from the following questions.

1. a. What are the parts of avian digestive system? Briefly explain about crop milk. 5
b. Briefly describe the carbohydrate digestion in chicken. 5
2. a. What are the parts of oviduct and how those parts are contributing in egg formation? 5
b. Write down the mechanism of egg shell formation of poultry. 5
3. a. What are the parts of respiratory system of poultry? Write down the role of air sac in respiration of poultry. 5
b. What are the lymphoid organs in chicken and duck? Differentiate between adaptive and innate immunity in birds. 5
4. a. What is semen? Briefly sketch the spermatogenesis in chicken. 5
b. Write down the granulopoiesis in chicken. How will you differentiate monocyte from lymphocyte? 5
5. a. Enumerate the diverticium of cloaca. Briefly describe the regulation of urine volume in chicken. 5
b. Define cardiac cycle, venous return. How does heart beat regulation occur in chicken? 5

Chittagong Veterinary and Animal Sciences University
Department of Physiology, Biochemistry and Pharmacology

MS in Physiology Final Examination 2015

Semester: January-June

Course Title: Animal Behavior and Welfare (Theory)

Course Code: ABW-601

Total marks: 40, Time: 2 hours

(Figures in the right indicate full marks. Answer any FOUR (4) questions).

- 1 a. Write down the importance of studying animal behavior? List the tools that are used for recording animal behavior. 3
- b. How do you recognize leader in a group of animal? Discuss about social organization of cattle. 4
- c. How do dairy cattle adjust their behavior in hot weather? 3
- 2 a. Write a short note on temperament and emotional behavior. 3
- b. Write down the methods of slaughter of animal? Write a short note about slaughter houses of Bangladesh. 4
- c. What are the behavior indicators of normal animal? What is dominance, hierarchies and leadership? 3
- 3 a. How can you assess the animal welfare? Why assessing poor welfare is important in study of farm animal welfare? 3
- b. What are the modes of land transportation in Bangladesh? What are the OIE guidelines for land transport of cattle? 4
- c. What are human-animal relationships (HARs)? How does it improve the welfare and productivity of dairy animal? 3
- 4 a. What are the five principles of animal welfare? Write down the critical points of welfare during cattle handling and transport. 3
- b. Define ethogram, flight distance, point of balance, monocular vision, and binocular vision. 3
- c. What is stereotypy? Write down the abnormal behavior of cattle, horse and chickens. 4
- 5 a. Write down the estrous behavior of dairy cow. What are the relationship between good welfare and production of a dairy farm? 3
- b. Do you find any relation between animal welfare and economy? Briefly discuss about it. 3
- c. Briefly discuss about recent development of animal welfare in Bangladesh. 4

Chittagong Veterinary and Animal Sciences University
Department of Physiology, Biochemistry and Pharmacology

MS in Physiology Final Examination 2015

Semester: January-June

Course Title: Endocrine and Reproductive Physiology (Theory)

Course Code: EFP-601

Total marks: 40, Time: 2 hours

(Figures in the right indicate full marks. Answer any FOUR (4) questions).

- 1 a. Define silent estrus and estrus cycle. Describe the graphical illustrations of different reproductive hormones during estrus cycle of a cow. 3
- b. What are the follicular phases of estrus cycle of a cow? How do you determine the cow and doe are in estrus? 4
- c. List the hormones of placenta. How is milk let down in cow? 3
- 2 a. State the role of progesterone and prostaglandin in reproduction. 3
- b. What is the function of sertoli cells? Show a diagrammatic representation of spermatogenesis in a bull. 4
- c. What is superovulation? How could superovulation be performed? 3
- 3 a. Why aldosterone is known as life saving hormone? How this hormone is regulated? 3
- b. List the name of catecholamines. Write down the physiological effects of them. 4
- c. How is parturition initiated? Write down the mechanism of parturition of a cow. 3
- 4 a. Describe the effects of thyroid hormones on animal body. 3
- b. What are the differences between steroid and protein hormones? Briefly discuss about feed back loop. 3
- c. Which vitamin can act as a hormone and why? Show in schematic way about the activation of that vitamin in kidney. 4
- 5 a. What is androgen? Write down the functions of testosterone. 3
- b. What is synchronization? Write down the detailed use of prostaglandin in the process of estrus synchronization. 3
- c. Briefly discuss the synthesis of steroid hormone. 4

Chittagong Veterinary and Animal Sciences University
MS in Physiology January-June Semester Final Examination 2015
Department of Physiology, Biochemistry and Pharmacology
Course Title: Immunophysiology
Course Code: IMP-601
Full Marks: 40
Time: 2 hours

Figures in the right margin indicate full mark. Answer any 4 (FOUR) from the following questions.

1. a. Define immunity. Differentiate the identifying features of B and T lymphocytes. 5
- b. Compare the primary and secondary lymphoid organs. 5
2. a. Show in a sketch the production of monoclonal antibody. 5
- b. Define interferon and interleukin. What are the functions of cytokines? 5
3. a. What is vaccine? Enlist the characteristics of an ideal vaccine. 5
- b. Define adjuvant with classify them. What are the main causes of vaccination failure? 5
4. a. Enlist the vaccines produced by LRI, Mohakhali, Dhaka for poultry and animals. Differentiate between inactivated and live attenuated vaccine. 5
- b. Define hypersensitivity and enlist their types with example. Enlist some auto immune diseases. 5
5. a. Enlist the components of humoral immunity and mediators of immediate hypersensitivity. 5
- b. Briefly describe the mechanism of serum sickness. 5

Chittagong Veterinary and Animal Sciences University
MS in Physiology January-June Semester Final Examination 2015
Department of Physiology, Biochemistry and Pharmacology
Course Title: Molecular Cell Physiology
Course Code: MCP-601
Full Marks: 40
Time: 2 hours

Figures in the right margin indicate full mark. Answer any 4 (FOUR) from the following questions.

1. a. Define plasma membrane. What are the functions of plasma membrane? 5
b. Briefly describe the Chargoff's rule of DNA composition. 5
2. a. Define sense, antisense, exons, introns, mRNA splicing. 5
b. Briefly describe the DNA double Helix. 5
3. a. What is ion channel? Classify different types of ion channels. 5
b. Show in a table the various ionic concentrations in fluid compartments of the body. Enlist the resting potential of different cells. 5
4. a. Define central dogma. How does replication occur in a eukaryotic cell DNA? 5
b. What are the advanced tools and techniques in molecular biology? Sketch the PCR method. 5
5. a. Define cell communication. What are the unique signaling pathways in autocrine, paracrine and endocrine regulation? 5
b. Enumerate the contemporary view on cell survival and cell death. 5

Chittagong Veterinary and Animal Sciences University
Department of Physiology, Biochemistry and Pharmacology

MS in Physiology Final Examination 2015

Semester: January-June

Course Title: Body fluids and Circulatory Physiology (Theory)

Course Code: BCP-601

Total marks: 40, Time: 2 hours

(Figures in the right indicate full marks. Answer any FOUR (4) questions).

- 1 a. List the primary factors of blood coagulation. 3
- b. What are the fluids compartments of a cow? Write down the important constituents and functions of extracellular and intracellular fluids. 4
- c. Briefly describe the conduction of impulses of heart. 3
- 2 a. What is the fate of RBC, show in a sketch? 3
- b. Write a short note about plasma protein. 4
- c. List the name special circulations. Briefly discuss about systemic and pulmonary circulation. 3
- 3 a. What are the materials needed before collection of blood? Write down the procedure of collection of serum and plasma from an organized dairy farm 3
- b. Mention the cells of defense mechanism with their role in that process. 4
- c. What are the causes of edema? Write down the functions and formation of lymph in dairy cow? 3
- 4 a. Mention the properties and important functions of granulocytes cells of blood. 3
- b. Write down the differences between extrinsic and the intrinsic mechanism of blood coagulation. 3
- c. What are the relationship between cardiac output and stroke volume? Write down the regulating factors of cardiac output. 4
- 5 a. What is action potential? Briefly describe the successive stages of action potential in a diagram. 3
- b. List the name of transcellular fluids. Mention the functions of synovial fluid and CSF. 3
- c. List the name of natural anticoagulants. State the factors that hasten and prevent coagulation of blood. 4