Chattogram Veterinary and Animal Sciences University
Department of Physiology, Biochemistry and Pharmacology
**MS in Physiology Final Examination 2022**
**Semester: July - December**
Course Title: Integration Physiology (Theory)
Course Code: IPH-602
Total marks: 40, Time: 2 hours

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

1. a. List the name of muscle proteins. Write down the salient features of muscles with example. 4

   b. What is the relation between neurotransmitter and calcium? How is calcium help in muscle contraction? 3

   c. Write a short note on sliding filament theory of muscle contraction. 3

2. a. What is the origin of spinal nerve? Write down the distribution of the cranial nerve. 3

   b. Classify synapse. Draw and label a synapse. 3

   c. Enlist the different parts of brain. Write their functions. 4

3. a. How taste signal is transmitted to the brain? Explain taste differentiation. 4

   b. Enlist the different layers of eye. What are the role of aqueous humor and vitreous humor in visualization? 3

   c. What is blind spot? Briefly discuss about rhodopsin cycle. 3

4. a. Why nervous system is called coordinating system of the body? 3

   b. How do neurons communicate? Differentiate between sympathetic and parasympathetic nervous system? 3

   c. What are the components of reflex? Draw and label a monosynaptic reflex. 4

5. a. Classify vision of cattle? What are the functions of olfaction? 3

   b. What is organ of corti? Discuss the mechanism of hearing. 3

   c. Write down the thermoregulatory behavior of buffalo. How does skin regulate body temperature? 4

Chattogram Veterinary and Animal Sciences University
Department of Physiology, Biochemistry and Pharmacology
MS in Physiology Final Examination-2022
Semester : July-December
Course Title: **Digestive Physiology and Bioenergetics (Theory)**
Course Code: DPB-602
Total Marks: 40, Time: 2 hours
(Figures in the right indicate full marks: Answer 4 questions)

1. (a) Enlist the different types of mechanical factors of digestion of ruminant animals. Briefly discuss any two of them. 4
   (b) How is gastic juice secretion regulated in animal body? 3
   (c) What are the sources of succus entericus? Write down the composition and functions of succus entericus. 3

2. (a) Write down the physiological roles of hydrochloric acid (Hcl) in food digestion. Sketch the mechanism of Hel secretion from parietal cells of stomach in dog? 4
   (b) Enlist the gastrointestinal hormones with their sources and functions. 3
   (c) Differentiate between glutamate and glutamine. List the catabolic pathway for protein metabolism in animal body. 3

3. (a) What do you mean by luminar phase enzymes and membranous phase enzymes? Write down the mechanisms of nucleic acid digestion in animals. 4
   (b) Write down the physiological importance of crop, mechanical stomach, glandular stomach and ceca in chicken. 3
   (c) Why "store glycogen" in called "fuel reserve" in our body? Briefly discuss the breakdown process of glycogen in hepatocyte? 3

4. (a) How is protein digestion occurred in compound stomached animals? 4
   (b) Briefly discuss about the water absorption process from GI tract to blood in dog. Write down the pathophysiology of diarrhea. 3
   (c) What do you mean by central dogma? Mention the enzymes involved in transcription and reverse transcription procedure. 3

5. (a) Write down the mechanism of carbohydrate digesting in simple stanched animals? 4
   (b) Define 'mixed micelle' and 'chylomicron'. Write down the mechanism of formation and secretion of chylomicrons by intestinl mucosal cells. 3
   (c) Enumerate the fate of ammonia in ruminants and poultry separately. 3

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

**MS in Physiology Final Examination 2022**

**Semester: July-December**

Course Title: Excretory Physiology and Acid-base Balance (Theory)

Course Code: EPA-602

Total marks: 40, Time: 2 hours

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

| | | | |
|---|---|---|---|
| 1 | a. | Sketch the mechanism of urine formation. | 3 |
| | b. | Briefly describe the process of micturition. | 4 |
| | c. | State the physical examination procedure of urine. | 3 |
| 2 | a. | State the role of sweat and sebum in homeostasis of the body. | 3 |
| | b. | Explain the mechanism of sweat formation. | 3 |
| | c. | State the role of musk gland. | 3 |
| | d | How does skin play role in excretory physiology? | 1 |
| 3 | a | Describe Hering-Breuer inflatation reflex. | 4 |
| | b | How do you identify a dead fetus by your knowledge of respiratory physiology? | 4 |
| | c | What is vital capacity? | 2 |
| 4 | a | Define buffer. State the principal buffer of animal body. | 5 |
| | b | Describe phosphate buffer of animal body. | 5 |
| 5 | a | How is O2 transported to the cell? Enlist the layers exist in the pulmonary membrane. | 5 |
| | b | What are the locations of respiratory centre? Briefly discuss about reflex mechanism of respiration. | 5 |

J-D/22

Chattogram Veterinary and Animal Sciences University
Department of Physiology, Biochemistry and Pharmacology
**MS in Physiology Final Examination 2022**
**Semester: July-December**
Course Title: Concepts of Animal Welfare (Theory)
Course Code: CAW-602
Total marks: 40, Time: 2 hours

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

1. a. Briefly discuss about One Health, One Welfare and One Biology. 3

   b. How do you assess welfare of farm animal based on 5 freedoms? Identify behavior indicator of poor welfare. 3

   c. List the welfare indicator at live bird market? Discuss the relations between welfare and food safety of chickens at live bird market. 4

2. a. What are the possible methods of free-roaming dog population control in Bangladesh? Briefly discuss the effective one? 4

   b. Enlist poor welfare at dairy farm? How will you manage good welfare practices at dairy farm? 4

   c. Mention the ways by which animals express pain. 2

3. a. How will you ensure 5 freedoms for farm animals? Briefly discuss the concepts of animal welfare development in Bangladesh. 5

   b. What are the WOAH guidelines of animal welfare? Discuss the guidelines for the slaughter of animals. 5

4. a. What are the humane methods of killing animals? Define euthanasia and emergency killing. 3
   b. What is 3 Rs? List major welfare issues in animal experimentation. 4
   c. What is the humane end point of laboratory animal? 1
   d. When will you euthanize animals? 2

5. a. What are the penalties under Slaughter and Meat Quality Control Act, 2011? 3

   b. Define ethics and legislation. Write down the obligatory ethical values to be practiced for a veterinary practitioner. 4

   c. Enumerate the actions can be termed under cruelty against animals as per Animal Welfare Act, 2019. 3

# Chattogram Veterinary and Animal Sciences University

Department of Physiology, Biochemistry & Pharmacology

MS (Pharmacology)

Final Examination-2022

July-December Semester

Sub: Pharmacy (PHA-602)

Total Marks: 40 Time: 2 hours

**Answer the following questions (any four). Here question one and two compulsory.** **4 x 10 = 40**

1. a) Define "Pharmacy". What are the responsibilities of a pharmacist?
   b) What are the problems and reasons for irrational uses of drugs?
   c) How one can improve relational drug prescribing?
2. a) What is "Drug incompatibilities? Classify drug interactions.
   b) Sate "Drug regulation roles and act".
   c) Mention the role of WHO in drug regulations.
3. a) What do you mean by "Community pharmacy". What are the main activities of a community pharmacist?
   b) Differentiate complementary medicine from alternative medicine. Classify prescription.
   c) Mention "Code of ethics in pharmacy profession".
4. a) Define "Tablet, Capsule, Pill, Suspension, Suppository".
   b) How a drug standardized?
   c) Briefly state the process of syrup preparation and quality control of preparel syrup.
5. a) What are the residual effect of drugs?
   b) Sketch the process to evaluate residual effect of drug?
   c) Write about common techniques for the preparation of drug.

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

**MS in Physiology Final Examination 2022**

**Semester: July-December**

Course Title: Wildlife Physiology (Theory)

Course Code: WPH-602

Total marks: 40, Time: 2 hours

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

| | | | |
|---|---|---|---|
| 1 | a. | Briefly describe about "World Wildlife Fund". | 5 |
| | b. | What are the major causes of diminishing wildlife number in the world? | 5 |
| 2 | a. | How will you measure physiology in free living animals? | 5 |
| | b. | What are the 3Rs principles of wildlife research? | 5 |
| 3 | a | How will you monitor stress hormones in bat by non-invasive techniques? | 5 |
| | b | Chronic captivity stress in wild animals is highly species-specific-Justify this statement. | 5 |
| 4 | a | What are the consequences of climate change for Aardvarks? | 5 |
| | b | How will you reduce the risk of anaesthetic-related deaths in immobilised rhino? | 5 |
| 5 | a | How will you collect blood sample from deer? | 5 |
| | b | How will you take read temperature from an elephant? | 5 |

**Chattogram Veterinary and Animal Sciences University**
**Faculty of Veterinary Medicine**
**Department of Physiology, Biochemistry and Pharmacology**
**MS in (Pharmacology) July December semester final-2022**
**Course title: Toxicology of Pesticides**
**Course Code: TOP-602**
**Total Marks: 40**

Figure in the right margin indicate full marks. Please answer 4 (Four) questions from below list

| | | |
|---|---|---|
| 1. | Classify the Herbicides and describe its Chemistry, Properties, Toxicokinetic, mechanism of action, Clinical signs, Diagnosis, Postmortem findings, Treatment & Management in Veterinary medicine. | 10 |
| 2. | Describe the scenario of Asymptomatic Anticoagulant Rodenticide Exposure in Dogs and Cats. | 10 |
| 3. | Briefly describe the Triazines, Triazoles, and Benzimidazoles used as Pesticides in different Environmental compartments or settings. | 10 |
| 4. | Enumerate the Impact of Herbicides on Aquatic and Soil Biota and Human Health in Bangladesh perspective. | 10 |
| 5. | Describe the Crucial Role of Mechanisms and Modes of Toxic Action for Understanding Tissue Residue Toxicity and Internal Effect Concentrations of Organic Chemicals. | 10 |
| 6. | Describe the Organophosphorus Compound Poisoning and Its Outcome. Is there any available data on Recent Situation of Pesticide Poisoning in Bangladesh. | 10 |

**Chattogram Veterinary and Animal Sciences University**
**Faculty of Veterinary Medicine**
**Department of Physiology, Biochemistry and Pharmacology**
**MS in (Pharmacology) July December semester final - 2022**
**Course title: Systemic Pharmacology**
**Course code: SPH-602 (Theory)**
**Total Marks: 40**

Figure in the right margin indicate full marks. Please answer 4 (Four) questions from below list

1. Classify purgatives. Explain the mechanism of action of irritant purgatives. Cite the examples of few natural purgative agents available in Bangladesh from plant sources — 10

2. Describe the systemic approach to anesthetic management of dogs and cats. How you explain the term balanced anesthesia. Cite the example of different drugs for maintenance anesthesia in cats. Mention the dose of pentobarbitone as sedative, general anesthesia and euthanasia as well in dogs. — 10

3. The unnecessary use of diuretics towards a healthy horse, perhaps in excessive doses, can lead to dehydration, hypokalemia, and hypotension- justify the mechanism of these adverse effects. What are the dangers of diuretics use among athletes. — 10

4. How a Veterinarian Manage the Acute Decompensated Congested Heart Failure in dogs. Briefly describe the different drugs combination with doses. — 10

5. Classify bronchodilators. Explain the mode of action of a beta-2 receptor agonist bronchodilator. Enlist 5 pharmaceutical products of this drugs available in the market — 10

6. In a table provide the receptor and response stimuli for adrenergic and cholinergic in the following organs including heart, lung, intestine, urinary bladder and arteries. — 10

**Chattogram Veterinary and Animal Sciences University**
**Faculty of Veterinary Medicine**
**Department of Physiology, Biochemistry and Pharmacology**
**MS in (Pharmacology) July December semester final-2022**
**Course title: Toxicology of Drugs and Chemical Residues**
**Course Code: TCD-602**
**Total Marks: 40**

Figure in the right margin indicate full marks. Please answer 4 (Four) questions from below list

1. How do you describe the term "drug incompatibility "Enumerate the interaction of drugs with minerals, foods and other drugs in the alimentary tract. 10

2. In perspective to "Veterinary Drug Residue" describe The Risk, Public Health Significance and its Management. 10

3. Do you think that Occupational health hazards in veterinary medicine is neglected issue. What are the deleterious effects of Physical, Psychological, and Chemical hazards. 10

4. How do you interpret the Food safety impacts of antimicrobial use and their residues in aquaculture industry in Bangladesh perspective. 10

5. Describe the Pesticides pollution and enlist the different sorts of pesticides that have impact on human health. Additionally, demonstrate the extraction and treatment techniques for those pesticides. 10

6. Estimate the withdrawal period for veterinary drugs used in food producing animals. Do you think as a middle- and low-income countries we have a Guideline on determination of withdrawal periods for edible tissues. If yes, what are the key points in that guideline. 10

**ChattogramVeterinary and Animal Sciences University**

Department of Physiology, Biochemistry & Pharmacology

MS (Pharmacology)

Final Examination-2022

July-December Semester

Sub: Endocrinology and Nutritional Pharmacology (ENP-602)

Total Marks: 40 Time: 2 hours

**Answer the following questions (any four).** **4 x 10 = 40**

1. a). Define endocrine pharmacology. Differentiate endocrinology with endocrine pharmacology.
   b). What is negative feedback mechanism: Write down the function of $G_nRH$ & HCG.
   c). What is EDC? How the EDC in calculated?
2. a). Define Hirsutism. Write down the etiology, classification, diagnostic workup & treatment of it.
   b). From which organ most circulating testosterone derived in women?
   c). Define Amenorrhea. How you evaluate in lab & treat it.
3. a). What is $T_3$ & $T_4$. Write down the indication, m/a, dose, adverse effects & contraindication of T3 in cat.
   b). Describe the adrenal hormone with their biosynthesis, function & contraindication.
   c). You examine a mare 22 days after a known single ovulation. This image shows the mid-portion of the left uterine horn.
   a). What is abnormal about the conception?
   b). What is the significance of this finding?
   c). What is likely outcome?
   d). What action would you take?
4. a). Write down the clinical problem associated with the menstrual cycle.
   b). Define Adolescent gynecology? Write down the specific problems of the adolescent.
   c). What hormonal drugs used to prevent, maintain and terminate pregnancy.
   d). Why ergomartin not used during labour by oxytocin used.
5. **Write Short note : (any five)** **5 x 2 = 10**

   (a) PRID & IUDs; (b) Spermicides; (c) Abruption placental ; (d) Rh iso immunization;
   (e) Steroid hormones ; (f) Insuline; (g) Rhodopsin cycle;

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

**MS in Pharmacology Final Examination 2022**

**Semester: July-December**

Course Title: Chemotherapy of Parasitic Diseases (Theory)

Course Code: CPD-602

Total marks: 40, Time: 2 hours

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

| | | | |
|---|---|---|---|
| 1 | a | What do you mean by azole derivatives? | 5 |
| | b | Briefly describe the mode of action of benzimidazole. | 5 |
| 2 | a | State the dose of levamisole in small ruminants. | 5 |
| | b | How does levamisole act as immunomodulator? | 5 |
| 3 | a | List the antiprotozoal drugs for cattle with their doses. | 5 |
| | b | How does imidocarb act against protozoal diseses? | 5 |
| 4 | a | State the mechanism of action of ivermectin. | 5 |
| | b | Explain the side-effects of ivermectin in cattle. | 5 |
| 5 | a | List the anti-cestodal drugs. | 5 |
| | b | Illustrate the mechanism of action of piperazine citrate. | 5 |