

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

**MS in Physiology Final Examination 2022**

**Semester: January-June**

Course Title: Avian Physiology (Theory)

Course Code: AVP-601

Total marks: 40, Time: 2 hours

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

1. a. Differentiate the followings; 3x2=6
- i. Mammalian and avian reproductive system
  - ii. Mammalian and avian digestive system
  - iii. Mammalian and avian respiratory system
- b. List the parts of oviduct of White Leghorns. How those parts are contributing in egg formation? 4
2. a. Write down the function of crop? Enumerate the enzymes and hormones found in the gastrointestinal tract. 5
- b. Write down the parts of nephron of birds. Briefly describe the mechanism of urine formation of birds. 5
3. a. What is the name of ovulatory hormone? Lighting associated with hormonal and physiological factors are mainly helpful for ovulation in birds-justify the statement. 5
- b. What is the name of absorptive hormone? Briefly describe the absorption of nutrients in chickens. 5
4. a. What are the parts of respiratory system of poultry? Write down the respiratory mechanism of birds. 5
- b. Illustrate the process of erythropoiesis in chicken. 5
5. a. Write the composition of semen? Briefly sketch the spermatogenesis in duck? 5
- b. Write the difference between mammalian and avian blood vascular system. Briefly discuss the morphology of leukocytes of birds. 5

Chattogram Veterinary and Animal Sciences University  
Department of Physiology, Biochemistry and Pharmacology  
MS in Physiology Final Examination-2022

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 plasma proteins and write their origin and functions. 4
  - b. Classify blood vessels. Discuss about blood vessel which contain two-third to three-fourth of the total blood. 3
  - c. Note the normal time and voltage of P wave and QRS complex and normal time of PR and QT interval. How do you measure P mitrale, hypokalemia and hypocalcemia in grid? 3
  
2.
  - a. What are the factors necessary for hemoglobin synthesis? Describe mechanism of the synthesis of hemoglobin. 4
  - b. How are neutrophils and monocytes attracted towards the inflamed area? Write down the response of neutrophils and macrophages during inflammation. 3
  - c. What is erythropoiesis? Discuss the role of kidney and liver in erythropoiesis. 3
  
3.
  - a. Define the cardiac output and stroke volume. What are the factors affecting to the cardiac output? 4
  - b. Where does the conduction of heart start and write it's spreading sequentially? What are the conditions that must be maintained for normal conducting system? 3
  - c. Briefly discuss the chemical regulation of heart. 3
  
4.
  - a. What is a blood group system? What is the physiological and genetic basis of blood grouping? 4
  - b. List the circulations exist in the body. State the importance of a hepato-portal circulation. 3
  - c. Write short note on "Fetal Circulation". 3
  
5. Write short notes on:
  - a. RE system 4
  - b. Synovial fluid 3
  - c. Heart block 3

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

**MS in Physiology Final Examination 2022**

**Semester: January-June**

Course Title: Molecular Cell Physiology (Theory)

Course Code: MCP-601

Total marks: 40, Time: 2 hours

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

- 1 a. Explain the Fluid Mosaic membrane model of plasma membrane structure. 3  
b. List the major functions of Golgi body. 4  
c. Describe the structure and functions of nuclear pore. 3
  
- 2 a. Describe the structure and functions of tRNA. How does it differ from mRNA? 3  
b. Describe the Watson and Crick model of DNA structure. 3  
c. Describe the ultra-structure of Endoplasmic reticulum. 3  
d. Describe briefly the functions of mitochondria. 1
  
- 3 a. Describe the process of protein synthesis. 4  
b. Explain about different modifications of plasma membrane. 4  
c. Give an account of DNA with respect to its structure and replication. 2
  
- 4 a. Give an account of the different types of RNA and the role of each in protein synthesis. 3  
b. What are the structural and regulator gene? Explain genetic control of protein synthesis. 3  
c. Briefly describe about giant chromosomes. Explain the structure and functions of nucleus and its components. 4
  
- 5 a. What are the types of cell signaling? 2  
b. Give an account on Lac Operon and Tryptophan Operon. 3  
c. Comment on the polymorphic forms of lysosomes. 1  
d. Compare ribosomes of Prokaryotes and Eukaryotes. 4

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

**MS in Physiology Final Examination 2022**

**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. State the behavior indicators of normal animal. Discuss about the natural behavior of chicken. 5  
b. How will you assess welfare of intensively managed dairy cow in Bangladesh? 5
2. a. What are the purposes of transport of animals? Mention the critical points of welfare during cattle handling and transport. 5  
b. Enlist the welfare indicators of animals during slaughter? What are the WOHA (OIE) guidelines for slaughter of cattle? 5
3. a. What are the universal principles of animal welfare? Briefly discuss the animal welfare development in Bangladesh? 5  
b. List the different behavior of farm animals. Briefly describe the social behavior of cattle. 5
4. a. How is parturition initiated? Briefly discuss the parturition behavior in cow. 5  
b. Write down the critical points of welfare of dairy cow. Are there any relationships between heat stress and milk production? 5
5. a. What is humane slaughter? Discuss the welfare issue at the slaughterhouses in Bangladesh. 5  
b. Define stress. Write a short note on hypothalamo-pituitary-adrenal axis and stress. 5

Chattogram Veterinary and Animal Sciences University  
Department of Physiology, Biochemistry and Pharmacology  
**MS in Physiology Final Examination 2022**

**Semester: January-June**

Course Title: Endocrine and Reproductive Physiology (Theory)

Course Code: ERP-601

Total marks: 40, Time: 2 hours

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

- 1 a. Show the diagram of the hypothalamus-pituitary-thyroid axis with feedback loops with proper hormone labeling? 3
- b. Explain how the nervous system works with the endocrine system. Be detailed. 4
- c. What is the difference between endocrine, paracrine and autocrine signaling? 3
  
- 2 a. Does endocrine signaling have a long or short half life? 3
- b. What kind of endocrine signaling happens to maintain homeostasis? 3
- c. What type of cell signaling is used by epinephrine? 3
- d. Should we be concerned about the exposure to endocrine disruptor chemicals (EDCs) we have in our lives? 1
  
- 3 a. How are the testes thermoregulated? 4
- b. What is the blood-testis barrier-Explain briefly. 4
- c. What does the scrotum consist of? 2
  
- 4 a. What are the fundamental requirements of puberty and what does puberty results in? 3
- b. What is anestrous? What are the different factors of anestrous? 3
- c. What is an induced ovulation? Explain briefly. 4
  
- 5 a. What is lordosis? 2
- b. What is the mechanism of sexual behaviour? 3
- c. What is tumescence and detumescence? 1
- d. What are the four follicular dynamics? 4

**Chattogram Veterinary and Animal Sciences University**  
**Department of Physiology, Biochemistry and Pharmacology**  
**MS in Physiology Final Examination 2022**  
**Semester: January-June**  
**Course Title: Immuno-Physiology (Theory)**  
**Course Code: IMP-601**  
**Total marks: 40, Time: 2 hours**

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

- |   |    |   |   |
|---|----|---|---|
| 1 | a. | Describe the types of adaptive immunity with their mechanism of action.         | 4 |
|   | b. | Draw the overview of immune response in vivo.                                   | 4 |
|   | c. | Differentiate among different types of T lymphocytes present in mammals' blood. | 2 |
| 2 | a. | Describe the process of producing a vaccine for a new emerging disease.         | 4 |
|   | b. | Differentiate among various immunoglobulins.                                    | 5 |
|   | c. | Enlist the types of adjuvants.  | 1 |
| 3 | a. | Describe different immunoassay methods.   | 5 |
|   | b. | Draw and label IgA, IgG, IgE and IgM molecule.                                  | 4 |
|   | c. | Enlist the products of phagolysosome.   | 1 |
| 4 | a. | Sketch the pathways of complement activation.                                   | 5 |
|   | b. | Draw and differentiate between MHC molecules.                                   | 5 |
| 5 | a. | Describe various abnormal immune responses to normal antigen.                   | 4 |
|   | b. | Describe autoimmune skin diseases of animals.                                   | 4 |
|   | c. | Enlist the agents of secondary immune deficiencies.                             | 2 |