

Chittagong Veterinary and Animal Sciences University
DVM 1st Year 2nd Semester Final Examination-2015
Course Title: Histology and Embryology-II
Course Code: HEM-102 (T)

Full Marks: 70; Time: 3 Hours

Figures in the right margin indicate full marks. Answer any five (05) questions from each section.

Section-A

1. a) Briefly describe the histology of the duodenum. 4
b) Differentiate the lining epithelium between oesophagus and rumen under light microscope. 3
2. Briefly describe the histology of the ovarian cortex giving special emphasis on ovarian follicles. 7
3. a) Draw and label the histological structures of a renal corpuscle of kidney. 4
b) Mention the lining epithelium of different tubular parts of a nephron of kidney. 3
4. a) Mention the histological differences between spleen and lymphnode. 4
b) Draw and label the histological structures of cecal tonsil. 3
5. a) Describe the histology of the blood-air barrier of lung. 3
b) Draw and label the histological structures of trachea. 4
6. a) Mention the name of fetal membranes with their origins. 2
b) Draw and label different types of placenta based on the histological structures and thickness barrier of maternal and fetal blood. 5

Section-B

7. a) Describe the histology of the urinary bladder. 4
b) How do you differentiate thyroid follicle from the secretory acinus of mammary gland? 3
8. a) Describe the histology of the classical lobule of a liver. 4
b) What are the histological differences between different parts of large intestine? 3
9. Briefly describe the histology of the uterus giving special emphasis on endometrial changes during estrus cycle. 7
10. a) Describe the histology of a seminiferous tubule of testis. 4
b) Write down the histology of the pars distalis of pituitary gland. 3
11. a) Enlist hormones secreted by placenta. 2
b) What are the non-keratinocytes of skin epidermis? Describe the histology of the dermis of skin. 5
12. a) Give the histological differences between artery and vein. 3
b) Mention the histological differences between different types of salivary glands in a tubular form. 4

Chittagong Veterinary and Animal Sciences University
DVM 1st Year 2nd Semester Final Examination-2015
Course Title: Avian anatomy (Theory)
Course Code: AVA-102
Full Marks: 35; Time: 2 Hours

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

Section-A

1. a) Draw and label different parts of intestine of chicken in a order. 3
b) Describe the anatomy of glandular stomach in chicken. 3
2. a) Describe the keel bone and the synsacrum of poultry. 3
b) Name three pneumatic bones of birds. Give the vertebral formula of chicken. 3
3. Enlist the air sacs of birds and briefly describe their flying mechanism. 6
4. a) Draw and label different parts of respiratory systems of chicken. 3
b) Describe the organs of male genital system of cock. 3

Section-B

5. Write down the anatomical location of the following organs in poultry:
i) Ischiatic nerve ii) Liver iii) Uropygeal gland iv) Pancrease and v) Kidney 5
6. Enlist the lymphatic organs of poultry and briefly describe the anatomy of any two of them. 6
7. a) How is an egg formed within the oviduct? 3
b) Write a short note on the ovary of hen. 3
8. a) Mention the names of the joints of wing of a bird. 1
b) Write short note on cloaca and syrinx. 3
c) Write the name of two superficial veins and nerves in chicken. 2

Chittagong Veterinary and Animal Sciences University
DVM 1st Year 1st Semester Final Examination-2015
Course Title: Fodder Production (Theory)
Course Code: FPR-102 (T)
Full Marks: 35, Time: 2 Hours

(Figures in the right margin indicate full marks. Answer any **two** questions from each section where question no. 1 is compulsory. Use separate answer script for each section.)

Section-A

1. a) Define feed, fodder and forage. Classify fodder with examples. 5.0
b) Briefly discuss the historical development, problem and prospects of fodder production in Bangladesh. 3.0
2. a) Define hay and silage. Briefly discuss how silage is preserved for a long period of time as animal fed without deterioration. 4.0
b) Briefly discuss the characteristics of a good quality hay and silage. Mention the possible sources for losses of nutrients from hay and silage. 5.0
3. a) Define soil. List the components of soil. Briefly discuss the reactions, causes and corrections of acidic and alkaline soil. 4.0
b) Differentiate manure from fertilizer. Briefly discuss the procedure for preparation of Farm Yard Manure (FYM). 5.0

Section-B

4. a) Define irrigation and drainage. Briefly discuss the importance of irrigation in a fodder plot 4.0
b) Give a detail description for production of German grass, Maize crop and Ipil-ipil tree. 5.0
5. a) Define pasture. Briefly discuss the importance of pasture for high yielding dairy cows. 4.0
b) Define weed. Briefly discuss the prevention, control and eradication methods for common weeds in Bangladesh. 5.0
6. Write short notes (**Any three**): 3x3=9.0
 - (i) Triticale
 - (ii) Standards for silage
 - (iii) Geo-climatic zones of Bangladesh
 - (vi) Buffering of soil

Chittagong Veterinary and Animal Sciences University

DVM 1st Year 2nd Semester Final Examination-2015

Course Title: Systemic Physiology

Course Code: SPH-102 (T)

Full Marks: 70; Time: 3 Hours

(Figures in the right margin indicate full marks. Answer any **three** questions from each section where question no. **1 and 5** are compulsory. Use separate answer script for each section. Split answer is discouraged)

Section-A

1. a) What are the physiological roles of saliva on digestion of food? List the amylolytic, lipolytic and proteolytic enzymes associated with digestion. 4
b) State the role of bile in digestive process. 3
c) Describe the digestion of carbohydrate in ruminant. 4
2. a) List the factors that influence O₂ carrying capacity of blood. 3
b) Write short note on vital capacity and chloride shift. 4
c) State the mechanism of respiration in cattle. 5
3. a) Write down the significance of Juxtaglomerular apparatus? Discuss glomerular filtration during urine formation. 5
b) List the physiological roles of kidney. Discuss how urine volume is regulated? 5
c) Define renal clearance and renal threshold. 2
4. a) Enlist and discuss various factors affecting growth of animal. 4
b) What are the special adaptive features of camel and giraffe in their respective environment? 4
c) What is heat balance? How does animal maintain heat balance? 4

Section-B

5. a) What are the sensory modalities? Write down the importance of smell of a bull. 2
b) What is stereotypy? List the abnormal behaviors of horse, cattle and chicken. 3
c) What is ethogram? Write down the parturient behavior of mare, cow and doe. 3
d) What are the importances of knowledge of farm animal behavior of a veterinary student? Enlist the behavior indicators of poor welfare. 3
6. a) What is critical temperature? How does animal maintain body temperature when exposed to cold weather? 4
b) How do you measure body temperature of a cow? Write down the normal body temperature of horse, cow, dog, elephant and chicken. 4
c) Differentiate between a) Core temperature and shell temperature 4
b) Homoeothermic and poikilothermic animals
7. a) What are the functions of muscle? 3
b) State the steps in muscle contraction and relaxation. 3
c) Describe the mechanism of propagation of action potential. 6
8. a) List the buffer system in blood. Discuss the role of kidney in acid-base equilibrium. 5
b) Classify behavior. List the five universal freedoms of animal. 4
c) List the mechanical factors of digestion. Write down the composition and functions of gastric Juice. 3

Chittagong Veterinary and Animal Sciences University
DVM 1st Year 2nd Semester Final Examination, 2013
Course Title: Animal Hygiene (Theory)
Course Code: - AHY-102
Full Marks: 55, Time: 3 Hours

Figures in the right margin indicate full marks. Answer any 3 (three) questions from each section where question number 1 is compulsory. Use separate answer script for each section.

Section-A

1. a) What is soil? Classify it. 3
b) Write down the influence of soil on health. 3
c) Describe the steps that should be followed for the sanitary improvement of soil in a farm. 4
2. a) Define antiseptic and disinfectant with example. 2
b) Write down the characteristics of an ideal disinfectant. 2
c) Define fumigation. How will you fumigate a brooder house? 5
3. a) Define water borne and soil borne disease with examples and causal agents. 4
b) Write down the composition of fresh air. 2
c) What is acid rain? How can you prevent acid raining? 3
4. a) Describe the methods of animal transportation. 2
b) What types of measures should you take during animal transportation? 2
c) Define animal welfare. How arsenic problem has emerged in Bangladesh? 5

Section-B

5. a) Give physical properties and function of water. 3
b) What is hardness of water? How does water become self purified? 3
c) Write in brief about bacterial spore. 3
6. a) Define radiation hazard. Enumerate the source of radiation. How to minimize the risk of radiation hazard? 4
b) Classify ventilation. Illustrate the most common type of ventilation practices in our country. 5
7. a) Write down the ecological impact of acid rain. What are the measures should be taken to prevent acid rain? 3
b) Define sanitation. Give a brief description of cesspool and septic tank. 3
c) Illustrate the nitrogen cycle. 3
8. a) Write short notes on any 3 (three) of the following 3X3=
i) Spring and well 9
ii) Impurities of air
iii) Isolation and quarantine
iv) Storage of solid and liquid manure

Chittagong Veterinary and Animal Sciences University
DVM 1st Year 2nd Semester Final Examination-2015
Course Title: Gross Anatomy (Theory)
Course Code: GRA-102 (T)
Full Marks: 70, Time: 3 Hours

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

Section-A

1. a) What is pericardium? Give the anatomical location of heart in horse, cattle and dog. 4
b) Mention the structures that form the root of heart in ox. 3
2. a) Draw and label the male genital organs of a bull. 4
b) Describe the anatomy of the accessory genital glands of a bull. 3
3. a) Name the lymphocenters of abdominal viscera. 3
b) Write the contribution of lymphatic ducts which lead to the formation of the thoracic duct with schematic diagram. 4
4. a) Name the ventricles of brain with their communication. 3
b) Describe the courses, branches and supply of the re-current laryngeal nerve. 4
5. a) Describe the tunics of eyeball of horse. 4
b) Describe the auditory ossicles of middle ear in horse. 3
6. a) List the organs of urinary system in goat chronologically. Describe the anatomy of right kidney in cattle. 4
b) Mention the location of adrenal glands with their secretion in goat. 3

Section-B

7. a) Mention the branches of thoracic aorta with their supply in goat. 5
b) Show the spinal meninges diagrammatically. 2
8. a) What is sympathetic ganglia? How does it form? 2
b) Define plexus. Mention the branches of ischiatic nerve in goat chronologically. 5
9. a) List the endocrine glands of the body with their locations in goat. 3
b) Mention the formation of jugular vein with it's function in goat. 3
c) Write down the blood supply of mammary gland of cow. 1
10. a) Describe the arterial supply of forelimb of goat. 5
b) List the branches of celiac artery in goat. 2
11. a) List the lymphoid organs in goat. 1
b) List the hormones secreted from pars distalis of the pituitary gland. 3
c) List the superficial lymphnode of animal body. 3
12. a) Write down the branches and supply of facial nerve in goat. 5
b) Write down the formation of brachial plexus in cattle and goat. 2

Chittagong Veterinary and Animal Sciences University
DVM 1st Year 2nd Semester Final Examination-2015

Course Title: Biochemistry
Course Code: BIC- 102 (T)
Full Marks: 70; Time: 3 Hours

*(Figures in the right margin indicate full marks. Answer any three questions from each section where question no. 1 and 5 are compulsory. Use separate answer script for each section. Split answer is discouraged)

Section-A

1. a) Briefly state the application of biochemical knowledge in the field of veterinary and animal science. 2
b) Distinguish between the member of the following pairs: 6
i. Epimer and anomer
ii. Starch and cellulose
iii. Lactose and maltose
c) Define tautomerization. Write down the structures of a deoxy sugar and an aminosugar. 3
2. a) Classify proteins on the basis of their biochemical functions. Why is egg protein nutritionally an ideal protein? 4
b) What do you mean by 'protein denaturation'? Briefly state the changes in physical, chemical and biological properties of denatured protein. 4
c) Name (i) ketotriose and a monosaccharide found in fruits and honey; (ii) a natural anticoagulant and a metalloprotein occurring in blood; (iii) two forms of secondary structure and agents that cause protein denaturation and (iv) a sulfur containing amino acid and an acidic amino acid. 1x4=4
3. a) Classify lipids with examples. Distinguish between fat and oil. 5
b) Name the essential fatty acids. Why are they essential for animals? 3
c) Match the following: 0.5x8=4

Column-A	Column-B
Triacylglycerols	Odd chain fatty acids
Tocopherol	Phospholipids
Omega ₆ fatty acid	Ketone body
β-hydroxybutyric acid	Essential fatty acids
Lecithin	Vitamin E
Valeric acid	Simple lipids
HDL	Lipoprotein
Cyclopentanoperhydrophenanthrene	Steroid nucleus
4. a) Define nucleic acids. What are the basic differences between DNA and RNA in relation to their base compositions, site at location and functions? 4
b) Write down the role of mRNA, tRNA and rRNA in protein biosynthesis. How does protein biosynthesis occur in a eukaryotic cell? 4
c) Define the followings terms: 1x4=4
(i) Codon, (ii) Gene, (iii) T_m and (iv) Central dogma

Section-B

5. a) Define metabolism. List the unique features of anabolism and catabolism. 3
b) Differentiate between glycolysis and gluconeogenesis. Show the reactions for the entry of glucose into the main stream of glycolysis with enzymes and co-factors involved. 4
c) Explain how 38 moles of ATP are produced when a mole of glucose is completely oxidized into CO₂ and water. 4
6. a) Classify enzymes on the basis of reaction types that they catalyze (with one example in each class). 3
b) Enumerate the factors affecting enzyme action. Discuss the effect of temperature and p^H. 3
c) Define the following terms: 3
i) Co-enzyme, ii) Co-factor, iii) V_{max} and iv) K_m
d) What is action site? Write down salient features of action site. 3
7. a) How many moles of ATP will be produced from a complete oxidation of one mole of glucose? Mention the importance of pentose phosphate pathway in lactating animal. 3
b) Illustrate the cori cycle. State the biological significance of cori cycle in animal. 3
c) What is anaplerotic reaction? Give one example. 3
d) What are the end products of an odd-numbered fatty acid when it is oxidized via beta-oxidation? Show how this end product is further oxidized into CO₂ and H₂O. 3
8. Write short notes **any four** of the following: 3x4=12
(i) Urea cycle, ii) Mutarotation, iii) β-oxidation, iv) Glycogenolysis, v) Chargaff's rule and vi) Replication