

Chattogram Veterinary and Animal Sciences University
DVM 1st Year 2nd Semester Final Examination-2024
Course Title: Systemic Physiology (Theory)
Course Code: 0912-SPH-102 (T)
Full Marks: 70, Time: 3 Hours

(Figures in the right margin indicate full marks. Answer three (3) questions from each section where question number 1 and 5 are compulsory. Use separate answer script for each section. Fractions of the questions must be answered together.)

SECTION-A

- | | | | |
|----|----|---|---|
| 1. | a) | Mention the characteristics of voluntary and involuntary muscle. | 4 |
| | b) | Briefly describe the mechanism of skeletal muscle contraction. | 4 |
| | c) | Enlist and discuss the various factors affecting growth of animal. | 3 |
| | | | |
| 2. | a) | Enlist the behavior indicators of good welfare. | 4 |
| | b) | Briefly describe the social behavior of cattle. | 4 |
| | c) | Classify vision of cow and describe the flight zone and point of balance. | 4 |
| | | | |
| 3. | a) | Draw and label a typical nephron. | 4 |
| | b) | List the substances reabsorbed in the nephron in tabular form. | 4 |
| | c) | Describe the regulation of urine formation by ADH hormone. | 4 |
| | | | |
| 4. | a) | Briefly describe the chemical regulation of heat production in cow. | 4 |
| | b) | Enlist the ways of heat loss and heat gain in animals. | 4 |
| | c) | List the name of enzymes of digestive juices. | 4 |

SECTION-B

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|----|----|---|---|
| 5. | a) | Describe the importance of various microbes in the ruminal digestion. | 4 |
| | b) | Explain the role of gastric juice in the body physiology of an animal. | 4 |
| | c) | Describe the carbohydrate digestion in the rumen. | 3 |
| | | | |
| 6. | a) | Sketch the layers of respiratory membrane. | 4 |
| | b) | Describe the importance of partial pressure for respiration. | 4 |
| | c) | Explain the role of respiratory centers and chemoreceptors in maintaining respiration. | 4 |
| | | | |
| 7. | a) | Describe the renal mechanism of acid-base balance. | 4 |
| | b) | Differentiate among filtration, reabsorption and secretion in the kidneys. | 4 |
| | c) | Describe the RAAS system. | 4 |
| | | | |
| 8. | a) | Which anatomical and physiological changes facilitate the penguins to thrive in the Antarctic region? | 4 |
| | b) | Enlist the adaptive changes occurred in the body while staying at high altitude. | 4 |
| | c) | Differentiate between homeothermic and poikilothermic animals. | 4 |

Chattogram Veterinary and Animal Sciences University
DVM 1st Year 2nd Semester Final Examination-2024
Course Title: Histology and Embryology-II
Course Code: 0912-HEM-102 (T)
Full Marks: 70, Time: 3 Hours

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

SECTION-A

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|----|----|---|---|
| 1. | a) | Write down the cells and different layers of cerebrum. | 3 |
| | b) | What is neurulation? Describe the process of nervous system development. | 4 |
| 2. | a) | Draw and label the histological structures of the Graafian follicle. | 4 |
| | b) | Give a brief description of histology of vagina. | 3 |
| 3. | a) | Define the juxtaglomerular apparatus. Explain its histology with figure. | 4 |
| | b) | Mention the lining epithelium of different tubular parts of a nephron with diagram. | 3 |
| 4. | a) | Briefly describe the histological structures of blood air barrier. | 3 |
| | b) | Draw and label the histological features of trachea. | 4 |
| 5. | a) | Draw and label the structures of hepatic lobule. | 3 |
| | b) | Illustrate the histology of the tongue having emphasis on papillae. | 4 |
| 6. | a) | Define and classify the placenta based on the distribution of chorionic villi with example. | 4 |
| | b) | Draw and label the structure of hair follicle. | 3 |

SECTION-B

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|-----|----|---|---|
| 7. | a) | Compare the histology of rumen, reticulum and omasum. | 3 |
| | b) | Draw and label a gastric gland. | 2 |
| | c) | Categorize the histology of duodenum and ileum. | 2 |
| 8. | a) | Outline the histology of the testes. | 3 |
| | b) | Explain the histology of blood-testis barrier. | 2 |
| | c) | Draw and label the histology of epididymis. | 2 |
| 9. | a) | Illustrate the histology of pituitary gland. | 3 |
| | b) | Draw and label the histology of pancreas. | 2 |
| | c) | Assemble the histology of the adrenal medulla. | 2 |
| 10. | a) | Formulate the comparison of artery and vein histologically. | 3 |
| | b) | Illustrate the histology of heart with explanation. | 4 |
| 11. | a) | Summarize the histology of the cornea with diagram. | 3 |
| | b) | Explain the histological features of retina. | 4 |
| 12. | a) | How do you differentiate bronchiole from bronchus histologically? | 2 |
| | b) | Illustrate the histology of seminal vesicle. | 2 |
| | c) | Compare the different types of capillaries histologically. | 3 |

Chattogram Veterinary and Animal Sciences University
DVM 1st Year 2nd Semester Final Examination-2024
Course Title: Avian Anatomy (Theory)
Course Code: 0912-AVA-102 (T)
Full Marks: 35, Time: 2 Hours

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

SECTION-A

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|----|--|---|
| 1. | a) Mention the location and component of the copulatory apparatus of duck. | 2 |
| | b) Describe the anatomy of the different parts of the avian stomach. | 2 |
| | c) Write down the shape and location of the spleen in a bird. | 1 |
| 2. | a) List the air sacs and briefly describe the largest one of a chicken. | 3 |
| | b) Write down the course of the ductus deference of a male bird. | 1 |
| | c) Mention the location and shape of the different lobes of the liver in a bird. | 2 |
| 3. | a) Draw and label the different parts of the cloaca in a bird. | 4 |
| | b) How does a bird pass it urine? | 1 |
| | c) What is the cecal tonsil in a chicken? | 1 |
| 4. | a) How do you differentiate a chicken kidney from a duck? | 2 |
| | b) How the pectoral and pelvic girdle are formed in a bird? | 3 |
| | c) Enlist the species that lack a gall bladder. | 1 |

SECTION-B

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|----|--|-------|
| 5. | a) What are the major divisions of the avian brain, which one is most developed? | 2 |
| | b) Mention the anatomy of Harderian gland in bird. | 2 |
| | c) Enlist the integumentary derivate of avian species. | 2 |
| 6. | a) What is the Meckel's diverticulum? | 1 |
| | b) Describe the anatomy of oesophagus. | 2 |
| | c) Describe the structure of syrinx of bird. | 3 |
| 7. | a) How does the oviduct play roles in egg formation? | 3 |
| | b) Which muscles are involved in respiration? | 1 |
| | c) How is the synsacrum formed? | 2 |
| 8. | Write short notes (any three) on: | 3x2=6 |
| | i) Uropygeal gland | |
| | ii) Bulla tympaniformis in duck | |
| | iii) Pituitary gland of chicken | |
| | iv) Pancreas of bird | |

DVM 1st Year 2nd Semester Final Examination-2024

Course Title: Gross Anatomy-II

Course Code: 0912-GRA-102 (T)

Full Marks: 70, Time: 3 Hours

(Figures in the right margin indicate full marks. Answer five (5) questions from each section. Use a separate answer script for each section. Fractions of the questions must be answered together.)

SECTION-A

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|----|----|---|---|
| 1. | a) | Mention the anatomical location of the major artery and vein at the neck region of a goat. | 2 |
| | b) | Give the anatomical location of the main branches and continuation of external iliac artery upto digit. | 5 |
| 2. | a) | Write down the spinal nerves formula of a cattle and goat. | 2 |
| | b) | Give the anatomical location of the ischiatic nerve at the different labels of the hind limb. | 5 |
| 3. | a) | Draw and label a longitudinal section of scrotum of a bull. | 2 |
| | b) | Write down the brief anatomy of testis of buck. | 3 |
| | c) | List the structural components of the spermatic cord. | 2 |
| 4. | a) | Briefly describe the anatomy of the thymus of a cattle. | 4 |
| | b) | Mention the location of the three superficial lymph nodes in a goat. | 3 |
| 5. | a) | List the endocrine glands with anatomical location, shape, and size in a goat. | 3 |
| | b) | Briefly describe the anatomy of the refractive medium of eye. | 4 |
| 6. | a) | Enlist the urinary organs in a cow chronologically. | 2 |
| | b) | Describe the anatomy of right kidney of a cow with net diagram. | 5 |

SECTION-B

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|-----|-----|--|---|
| 7. | a) | How to form autonomic nervous system anatomically? | 2 |
| | b) | Mention the location of the brachial plexus. | 1 |
| | c) | Write down the anatomical location of the ulnar nerve at the different regions/ segments of the fore limb. | 4 |
| 8. | a) | Write down the anatomical location, shape and size of both ovaries in a cow. | 3 |
| | b) | Mention anatomical features of cervix of a cow and compare with that of a goat. | 4 |
| 9. | a) | Briefly describe the anatomy of the conjunctiva. | 3 |
| | b) | Mention anatomy of lacrimal apparatus. | 4 |
| 10. | a) | Briefly describe the anatomy of the external ear of a cattle. | 3 |
| | b) | Briefly describe the anatomy of the vomeronasal organ and organ of taste. | 4 |
| 11. | a) | Draw and label the fetal blood circulation in a fetus. | 5 |
| | b) | What are the post-natal changes in heart and aorta? | 2 |
| 12. | | Write short notes on the followings: | |
| | i) | Lumbar plexus | 4 |
| | ii) | Udder of cow | 3 |

Chattogram Veterinary and Animal Sciences University
DVM 1st Year 2nd Semester Final Examination-2024
Course Title: Biochemistry (Theory)
Course Code: 0512-BIC-102 (T)
Full Marks: 70, Time: 3 Hours

(Figures in the right margin indicate full marks. Answer three (3) questions from each section where question number 1 and 5 are compulsory. Use separate answer script for each section. Fractions of the questions must be answered together.)

SECTION-A

- | | | |
|----|---|---|
| 1. | a) Discuss the classification and functions of biomolecules. | 4 |
| | b) Discuss the concepts of acids, bases, buffers and their biological significance. | 4 |
| | c) Define reducing sugar and explain what makes sucrose a non-reducing sugar. | 3 |
| | | |
| 2. | a) Classify enzymes with examples and discuss their mechanism of action. | 4 |
| | b) Explain the Michaelis-Menten equation. | 4 |
| | c) Describe the enzyme inhibition with suitable examples. | 4 |
| | | |
| 3. | a) Explain the transport of lipids via lipoproteins. | 4 |
| | b) Describe the role of carnitine in fatty acid metabolism. | 4 |
| | c) Describe the structure and function of triglyceride. | 4 |
| | | |
| 4. | a) Describe the structure of DNA and discuss the double helix model and base pairing. | 4 |
| | b) Differentiate between purine and pyrimidine. | 4 |
| | c) Discuss the characteristics and biological significance of genetic code. | 4 |

SECTION-B

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|----|---|--------|
| 5. | a) Define the terms: atom, molecule, biomolecule, and macromolecule. | 4 |
| | b) Discuss the scope of biochemistry in understanding the biological sciences in relation to veterinary medicine. | 4 |
| | c) Enumerate the elements of life with their specific roles. | 3 |
| | | |
| 6. | a) Define carbohydrate and classify carbohydrates with examples and functions. | 4 |
| | b) Enlist the distinguishing features of polysaccharide including starch, glycogen, cellulose and agarose in terms of monomeric unit, bond and biological function. | 4 |
| | c) Define glycolysis and show the three possible catabolic fates of pyruvate formed during glycolysis in sketch. | 4 |
| | | |
| 7. | a) Define amino acids and classify amino acid based on their nutritional point of view. | 4 |
| | b) Define metabolism and distinguish between anabolism and catabolism of carbohydrates molecule. | 4 |
| | c) Compare and contrast between lipoproteins and steroids. | 4 |
| | | |
| 8. | Write short note on any four: | 4x3=12 |
| | i) Replication | |
| | ii) Gluconeogenesis | |
| | iii) Restriction enzymes | |
| | iv) Transcription | |
| | v) Heteropolysaccharide | |

Chattogram Veterinary and Animal Sciences University
DVM 1st Year 2nd Semester Final Examination-2024
Course Title: Fodder Production (Theory)
Course Code: 0811-FPR-102
Full Marks: 35, Time: 2 Hours

(Figures in the right margin indicate full marks. Answer any **Three (3)** questions from each section, where question No. 5 is compulsory. Use separate answer script for each section. Fractions of the questions must be answered together)

SECTION-A

1. a) Differentiate feed, fodder and forage. What are the common characteristics of the fodders that belong to the family *Poaceae*? 1.5+1.5=3
b) Write down the scientific name of the following fodders: Napier, German, Para, Maize, Sorghum and Berseem. 3
2. a) Classify fodder crops with example. How should you cultivate Napier grass in Bangladesh? 2+2=4
b) What practical interventions may enhance the prospects of fodder production in Bangladesh despite land scarcity? 2
3. a) Classify weeds with example. What are the beneficial effects of weed? 1.5+1.5=3
b) What is rotational grazing? What are the prospects of fodder production in the hill-tracts of Bangladesh? 1+2=3
4. a) Define and classify soil. What are the major soil-tracts of Bangladesh? 1.5+1.5=3
b) What are the best soil characteristics for fodder production? Discuss the reaction, causes and corrections of alkaline soils? 1.5+1.5=3

SECTION-B

5. a) What are the main objectives of silage preparation? What are the distinguishing features of different silage quality standards? 1+1=2
b) What are the different phases of silage fermentation, and how do the associated biochemical changes influence silage quality and preservation practices in Bangladesh? 3
6. a) Define irrigation and drainage. Discuss different types of irrigation systems practised in Bangladesh. 1+2=3
b) What is the importance of irrigation and drainage for fodder cultivation? 3
7. a) Differentiate manure from fertilizer. Show the composition of major fertilizers used for fodder production. 2+2=4
b) Discuss the procedure for preparation of farmyard manure. 2
8. a) Define hay. What are the avenues for losses of nutrients from hay? 1+2=3
b) What are the detailed procedures for preparation and preservation of hay from black gram? 3