Chattogram Veterinary and Animal Sciences University

DVM 1st year 2nd Semester Final Examination 2019

Subject: Gross Anatomy (Theory)

Course Title: GRA-102 (T)

Full Marks: 70, Time: 3 Hours

(Answer any five questions from each section. Use separate answer script for each section.)

SECTION-A

1.	a)	What are urethral process and seminal colliculus?	2
	b)	Briefly describe the testis of a bull.	3
	c)	Write down the course of male urethra of bull.	2
2.	a)	State the anatomical location of heart of ox.	2
	b)	List the chief openings of right atrium.	1
	c)	Briefly describe the arterial blood supplied of the hind limb of a goat	4
3.	a)	Define lymph and lymphocenter.	1
	b)	Briefly describe the anatomy of thymus in cattle.	3
	c)	Write brief anatomy of pancreas and thyroid gland.	3
4.	a)	Write down the refractive media of eye.	2
	b)	Describe shortly the eyelids of cow.	2
	c)	Briefly describe the anatomy of the external ear of a goat	3
5.	a)	Define meninges. Differentiate cranial and spinal meninges.	3
	b)	Define spinal nerve. Briefly describe the formation of spinal nerve.	3
	c)	List the nerves of brachial plexus that supply to the digit of goat.	1
6		Write short note on any two of followings:	3.5×2 =7
	a)	Portal circulation	
	b)	Fallopian tube	
	c)	Scrotum	

SECTION-B

7.	a)	Mention the anatomical location, shape and ligaments of ovary in a cow.	3
	b)	Write down the location of urinary bladder, right kidney, left kidney and vagina of a cow.	4
8.	a)	Enlist the internal structures of left atrio-ventricle of bovine heart.	2
	b)	Note the major branches of abdominal artery of goat.	3
	c)	Briefly describe the pericardium of goat.	2
9.	a)	Explain the fibrous tunic of eyeball of ox.	3
	b)	Briefly describe the lacrimal apparatus of eye.	3
	c)	List the nerve supply to eye.	1
10.	a)	Define CSF. Narrate the circulation of CSF in a goat.	2
	b)	List the nerves of lumbar plexus of cow.	2
	c)	Define brain stem and mention the location of pituitary and pineal gland.	3
11	a)	Briefly describe the anatomy of the horn and cervix of uterus of a cow.	4
	b)	Define inguinal canal. List the content of the inguinal canal of buck.	3
12		Write short note on any two of the followings:	3.5×2 =7
	a)	Middle ear	
	b)	Spleen	
	c)	Penis of bull	

Chattogram Veterinary and Animal Sciences University

DVM 1st year 2nd Semester Final Examination 2019

Subject: Avian Anatomy (Theory)

Course Title: AVA-102 (T)

Full Marks: 35, Time: 2 Hours

(Figures in the right margin indicate full marks. Answer any three (3) questions from each section where **question number 5** is compulsory. Use separate answer script for each section.)

SECTION-A

1. a) What are the special features of avian digestive system those are anatomically differ from mammals? Describe about crop milk. 2+1
   b) Enlist the parts of oviduct. How those parts are contributing in egg formation. 1+2

2. a) Write down the anatomical location of following organs 1×5 =5

   I) Uropygeal gland of parrot
   II) Testis of cock
   III) Bulla tympaniformis in duck
   IV) Pituitary gland of duck
   V) Pancreas of turkey

   b) Enlist the species that lack gall bladder. 1

3. a) What are the salivary glands of chicken? Write down their anatomical locations. 1+2
   b) Draw and label the cloaca of adult chicken. Which system have adjoined cloaca? 2+1

4. a) Draw and label different parts of respiratory system of chicken. 3
   b) List the anatomical structures of the bird responsible for lightening of body weight and help to flight 3

Section B

5. a) Mention the vertebral formulae of most common avian species. What are the major differences in vertebral column of birds in compare to ruminant? 1+2
   b) Why preen gland is important? Enlist the species that lack preen gland. 1+1

6 a) How will you differentiate avian kidney from mammalian kidney? 3
   b) What are the key features of skull of avian species? 2
   c) What is furcula? How furcula is attached with keel bone? 0.5+0.5

7. a) Write the location of heart in bird. Briefly describe topographic anatomy of clinically important major superficial veins in birds 1+2
   b) Mention the location and shape of different lobes of liver of a bird 2
   c) Mention the name and specific location of largest peripheral nerve in chicken 1

8. a) What is air sac? How will you differentiate avian respiratory system from mammalian respiratory system? 1+2
   b) Mention the location and formation of copulatory apparatus of duck. 2
   c) Enlist the integumentary derivatives of avian species. 1

Chattogram Veterinary and Animal Sciences University

DVM 1st year 2nd Semester Final Examination 2019

Subject: Biochemistry (Theory)

Course Title: BIC-102 (T)

Full Marks: 70, Time: 2 Hours

(Figures in the right margin indicate full marks. Answer any three (3) questions from each section where **question number 1 and 5 are** compulsory. Use separate answer script for each section).

SECTION-A

1.	a)	Define biomolecule. Write down the substances in cells and the building blocks of which these are composed.	1+3 =4
	b)	Enumerate elements of life with their biological functions.	3
	c)	Differentiate between chemistry and biochemistry. Sketch the relationships of biochemistry with other science.	2+2 =4
2.	a)	Mention the source, amino acid number and functions of the following peptide: I. Glutathione II. Oxytocin III. Vasopressin IV. Angiotensin	4
	b)	'Human cannot digest grass whereas herbivores animal can'---explain	4
	c)	What is amino acid? Give their common physical properties.	2+2
3.	a)	How fats are different from lipid? What are the major functions of lipid in animal body?	2+2=4
	b)	Explain the differences between saturated and unsaturated fats. Why unsaturated fats are considered healthier?	2+2 =4
	c)	Briefly comment on saponifiable lipid. What does acid number signify?	1+3=4
4.		Write down the short note on any 4 (four) of the followings: a. Translation b. β oxidation c. Cori cycle d. Transamination e. Transcription	4×3 =12

Section B

5.	a)	Define nucleic acids. Differentiate between purines and pyrimidines. Write down the functions of nucleotide.	1+1+2 =4
	b)	Define the following terms: I. Gene II. Codon III. Cloning IV. Plasmid V. Genomic VI. Proteomics VII. Metabolomics VIII. PCR	0.5×8 =4
	c)	What is replication? Briefly discuss the replication process in a eukaryotic cell.	1+2=3
6	a)	What is the base-stacking interactions of nucleic acids? Why are they important?	2+2
	b)	Define enzyme. Write down the properties and applications of enzymes	2+2
	c)	'Enzyme used as diagnostic tools'--- explain	4
7.	a)	What are phospholipids? Write down the classification and functions of phospholipids	1+3 =4
	b)	What do you mean by ω-3 and ω-6 fatty acid? Discuss the source and functions of ω-3 fatty acids.	2+2 =4
	c)	Differentiate between glycolipids and lipoproteins. Write down the biomedical significance of different types of lipoproteins.	2+2=4
8.	a)	Define and classify carbohydrates with examples. Briefly discuss the biological functions of carbohydrates.	2+2 = 4
	b)	Differentiate between any two (2) of the following pairs; in terms of monomeric unit and functions I. Milk sugar vs Table sugar II. Starch vs Cellulose III. Hyaluronic acid vs Chondroitin sulfate	2+2 =4
	c)	Match the following: Ribose, Cerebrosides, blood sugar, ketone bodies, ergosterol, biuret, iodine number, glycine **Versus** Optically inactive, protein, degree of unsaturation, vitamin-D, glucose, glycolipids, RNA, acetoacetic acid	0.5×8=4

Chattogram Veterinary and Animal Sciences University

DVM 1st year 2nd Semester Final Examination 2019

Subject: Fodder production (Theory)

Course Title: FPR-102 (T)

Full Marks: 35, Time: 2 Hours

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

SECTION-A

1.	a)	Define fodder. Classify fodder crops based on life span.	1+1
	b)	What is legume fodder? Mention two legume fodders with sample.	0.5+0.5
	c)	Write down the prospects of fodder production in Bangladesh.	2.0
2.	a)	What is soil? Give the composition of soil.	1+1
	b)	Describe briefly the causes of acidic and alkaline soil.	2.0
	c)	Write short notes on (Any two) I. Soil particle, II. Soil pH III. Soil buffering	1+1
3.	a)	What is weed? Classify weed with example.	1+2
	b)	How will you control weed by biological and chemical means?	3.0
4.	a)	Define irrigation. What are the aims of irrigation?	1+1
	b)	What are the different types of irrigation systems available in Bangladesh?	2.0
	c)	Give the advantages and disadvantages of surface irrigation.	2.0

Section B

5.	a)	Define silage. What are the characteristics of crops suitable for production of silage?	1+2
	b)	Discuss the procedure for preparation of silage.	3.0
6	a)	Define hay. Discuss different types of hay. Discuss the avenues through which nutrients are lost during hay making.	1+1+1
	b)	Discuss the procedure of hay making. How should you store hay?	2+1
7.	a)	Discuss the procedure for cultivation of maize, German grass and Ipil Ipil tree.	3.0
	b)	What are the existing grazing systems of pasture in Bangladesh? Discuss the merits and demerits of different grazing systems.	1+2
8.	a)	What is manure and fertilizer? Mention three manures and three fertilizers with their nutritional composition.	2+1
	b)	Describe the preparation procedure of green manure.	3.0

Chattogram Veterinary and Animal Sciences University
DVM 1st year 2nd Semester Final Examination 2019
Subject: Systemic Physiology (Theory)
Course Title: SPH-102 (T)
Full Marks: 70, Time: 3 Hours

(Figures in the right margin indicate full marks. Answer three (3) from each section of which question number 1 and 5 are compulsory. Use separate answer script for each section.)

SECTION-A

1.	a)	What are the hormones secreted from kidney? What is Renin-Angiotensin-Aldosterone system?	4
	b)	What do you mean by tubular reabsorption? Enlist the substances reabsorbed in the proximal tubules of nephron.	1+2 =3
	c)	Explain the terms: renal threshold, plasma clearance, polyuria and oliguria.	2
	d)	Write down the normal and abnormal constituents of urine.	2
2.	a)	Define pneumothorax, tidal volume, anoxia and eupnea.	2
	b)	What is partial pressure? Write the factors affecting gaseous exchange through the respiratory membrane.	1+2 =3
	c)	'Lungs is the excretory organ' --Justify the statement.	3
	d)	Show the mechanism of respiration schematically.	4
3.	a)	What is myofibril and myofilaments? Write down the steps of sliding filament model of skeletal muscle contraction.	2+2 =4
	b)	Describe the terms; refractory period, end plate potential, summation and rigormortis.	4
	c)	Write down the phases of prenatal growth and postnatal growth, discuss briefly.	4
4.	a)	Define acclimatization. How do you differentiate the fever from the hyperthermia?	1+1 =2
	b)	Enlist the excretory organs. How do the excretory organs regulate body temperature-explain?	1+2 =3
	c)	Describe briefly the factors influencing the animal behaviour.	3
	d)	State the adaptive characteristics features of giraffe and camel in their respective environment.	4

Section B

5.	a)	How do volatile fatty acids (VFAs) are produced from different types of carbohydrates in compound stomached animals?	4
	b)	Write down the physiological roles of HCl in food digestion. Sketch the mechanism of HCl secretion from parietal cells of stomach.	4
	c)	List the name of different parts of digestive tracts of chicken. What is the function of gizzard?	3
6.	a)	What is succus entericus? Discuss the role of rumen microflora for digestion.	1+1 =2
	b)	Differentiate the simple digestion from the multiple digestion in tabular form.	3
	c)	Define defecation. Discuss the absorption and digestive end product of a dairy cow.	1+2 =3
	d)	What is vomiting? How salivation is regulated in man?	4
7.	a)	Explain the heat conservation and heat production mechanism of sheep during extreme cold.	3
	b)	Discuss about the term: frostbite, hibernation and critical temperature.	3
	c)	Write down the rectal temperature of mare, dairy cow, goat, camel, dog and chicken	3
	d)	You are asked to manage a Boston Terrier dog was left in non-ventilated car in hot humid weather and showing clinical signs like unconscious with distended tongue, open mouth and body temperature of 42^0C. What will be your comments?	3
8		Write short notes on (any three) a. Lung surfactant b. Micturition c. Muscle contraction d. Heat transportation	3×4 =12

Chattogram Veterinary and Animal Sciences University

DVM 1st year 2nd Semester Final Examination 2019

Subject: Histology and Embryology (Theory)

Course Title: 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.)

SECTION-A

1.	a)	Write down the cells and different layers of cerebrum.	3
	b)	What is neurulation? Describe the process of nervous system development.	1+3
2.	a)	Enlist the ovarian follicles in the ovary of cow.	1
	b)	Draw and label the histological structures of Graafian follicle.	3
	c)	Give a brief description of histology of vagina.	3
3.	a)	Define capillary.	1
	b)	Differentiate elastic artery from muscular artery under light microscope.	3
	c)	Histologically differentiate among thymus, lymph node, tonsil in a tabular form.	3
4.	a)	Define podocyte.	1
	b)	Differentiate proximal convoluted tubule from distal convoluted tubule of nephron under light microscope.	2
	c)	Write down the histology of juxtaglomerular apparatus with figure.	4
5.	a)	Enlist the alveolar cells of lung.	1
	b)	Enlist the barriers of blood-air barrier.	2
	c)	How will you differentiate trachea from bronchus under light microscope? Explain.	4
6	a)	Draw and label different types of cells of a gastric gland.	3
	b)	Enlist the common structural similarities and dissimilarities of rumen, reticulum and omasum histologically.	4

Section B

7.	a)	Draw and label fetal circulation with their change in post-natal life.	3
	b)	Define and classify placenta based on the distribution of chorionic villi on chorionic surface with example.	4
8.	a)	Enlist the pure endocrine glands of domestic mammals.	1
	b)	Differentiate anterior and posterior pituitary gland histologically.	3
	c)	Enlist the different zones of adrenal cortex. How will you differentiate them under light microscope?	3
9.	a)	Draw and label the histological structures of a hair follicle.	3
	b)	Briefly describe the histological structures of cornea.	4
10.	a)	Sketch the duct system of testis with their lining epithelium.	2
	b)	Write down in brief histology of seminiferous tubule of testis.	5
11	a)	Define portal triad.	1
	b)	Draw and label classic liver lobule under light microscope.	3
	c)	Differentiate histologically between duodenum, jejunum and ileum.	3
12.	a)	Define mononuclear phagocytic system.	1
	b)	Describe the general histological structures of alimentary canal with diagram	6

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: 1×4=4
      (i) Codon, (ii) Gene, (iii) Tm 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 Co_2 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) Vmax and iv) Km
   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 CO_2 and H_2O. 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