Chattogram Veterinary and Animal Sciences University
DVM 2nd Year 1st Semester Final Examination 2021
Course Title: Animal Nutrition (Theory)
Course Code: ANT-201 (T)
Full Marks: 70, Time: 3 Hours

(Figures in the right margin indicate full marks. Answer **Three (3)** questions from each section, where question No. **1** and **5** are compulsory. Use separate answer script for each section. Fractions of the questions must be answered together)

SECTION-A

1. a) Define carbohydrate, nutrient and nutrition. Why moisture and ash have been omitted from the equation of TDN? 4.0
   b) "Good quality corn silage" neither a roughage nor a concentrate - why? 3.0
   c) How does rumen gradually develop in a calf? Which factors regulate rumen development? 4.0

2. a) Briefly discuss the rumen environment. 4.0
   b) How digesta are mixed in a buffalo stomach? What are the alternate sites of microbial digestion for the non-ruminant animal? 4.0
   c) Briefly discuss the specific functions of rumen, reticulum, omasum and abomasum in ruminant animal. 4.0

3. a) How lignin depresses the digestibility of crude fibre?. How primary fermentation is different from secondary microbial fermentation? 4.0
   b) Illustrate the pathways for production of VFA from rice straw. 4.0
   c) Why gluconeogenesis is an inevitable pathway for the lactating animal? What are the possible sources of glucose for them? 4.0

4. a) Differentiate deamination from transamination with example. 4.0
   b) How NPNs are utilized for the protein supply of the host animal? 4.0
   c) Classify lipid with example. 4.0

SECTION-B

5. a) What is β-oxidation? How odd chain fatty acids are metabolized in the mitochondria of the animal body? 4.0
   b) Discuss the specific functions of micelle and chylomicron in lipid digestion. 3.0
   c) Differentiate the cytoplasmic and mitochondrial biosynthesis of fatty acids in animal body. How CLAs are formed in the rumen? 4.0

6. a) Differentiate apparent from the true digestibility. Discuss the steps for conducting digestibility trial for the 'Napier' grass. 6.0
   b) Discuss the characteristics of a balanced ration. How should you evaluate feeds for the ruminant animals? 6.0

7. a) Illustrate the flow-chart of crude protein digestion in ruminant animal. 4.0
   b) Why quality of protein is not important for the ruminant animal? 4.0
   c) Discuss the possible sources and fate of NH_3 in the ruminant animal. 4.0

8. Write short notes on (any four): 3×4=12
   a) Agro-industrial by-products
   b) Vitamin-mineral interrelationships
   c) Urea Molasses Multi-nutrient Block (UMMB)
   d) Total digestible nutrient (TDN)
   e) Biological value (BV)
   f) Anti-nutritional factors in feed

Chattogram Veterinary and Animal Sciences University

DVM 2nd year 1st Semester Final Examination 2021

Course Title: Neuroendocrine and Reproductive Physiology (Theory)

Course Code: NRP-201 (T)

Full Marks: 35, Time: 2 Hours

(Figures in the right margin indicate full marks. Answer **Three (3)** questions from each section, where question No. **1** compulsory. Use separate answer script for each section.)

SECTION-A

1.	a)	Define hormone. Explain the mechanism of action of hormones.	2
	b)	What is hypophysis? Name the hormones synthesis from hypophysis with their function.	2
	c)	How does aldosterone help to save the life?	1
2.	a)	How does the neuroendocrine system control the reproductive system? Explain briefly.	2
	b)	Enlist the reproductive hormones with their sources.	2
	c)	Mention the functions of steroid hormones. How is the steroid hormone synthesized?	2
3.	a)	Draw and label a typical nerve cell and mention particular functions of different parts of it.	2
	b)	Enlist the types and parts of the synapse.	2
	c)	How many types of synaptic transmission are present in the animal body? Describe the cholinergic synaptic transmission chronologically.	2
4.	a)	Draw a typical reflex arc and describe particular functions of its different parts.	2
	b)	Differentiate between sympathetic and parasympathetic systems in a tubular form with special focus on functional differences.	2
	c)	How have all the knowledge animal learns get embedded in their brain? Sketch the process of it.	2

SECTION-B

5.	a)	Mention the duration of estrus and estrous cycle in cow, mare, ewe, doe, bitch and queen cat.	2
	b)	Draw the endrocrinological feature of different stages of estrous cycle in a cow.	2
	c)	Describe the mechanisms and stages of parturition in a cow.	2
6.	a)	Enumerate the name of sense organs of the animal body. Briefly describe the temperature regulatory mechanisms of a buffalo.	2
	b)	What is olfactory system? How does it work?	2
	c)	What are the common flavors or tastes can be detected by animal tongue? Depicts the taste mechanism in a diagram.	2
7.	a)	A cat loves to scratch everything with its left forepaw. Which temporal lobe is more prominent in its brain? Which functions are controlled by that prominent lobe?	2
	b)	A dog is emotionally very attached to its owner and cry in his absence. Which region of that dog's brain is responsible for this emotional response? Write down the functions of different parts of that region.	2
	c)	What are the supportive cells of the CNS? Describe their functions.	2
8	a)	Mention the structural and functional developments present in the Graafian follicle but absent in the primary follicle.	1
	b)	Which factors are responsible for a good udder development in a high-yielding cow? How do these play role in excellent udder development?	2
	c)	After seeing a cooked chicken drumstick, a dog jumped over it and started eating. How could the dog recognize that chicken drumstick as his food? Sketch all the physiological pathways involved in it.	3

Chattogram Veterinary and Animal Sciences University

DVM 2nd year 1st Semester Final Examination 2021

Course Title: General Pathology-I (Theory)

Course code: GPT-201 (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 are encouraged to answer together)

SECTION-A

1. a) Define general pathology, clinical pathology, necropsy and necrosis. 2
   b) Mention the contributions of Aristotle, Ptolemy, Hipocrates and Cornelius Celsus in relation to the veterinary medicine. 4
   c) What do you mean by general death? 1

2. a) Define and classify amyloidosis. Write down its gross and microscopic lesions. 4
   b) Write down the microscopic lesions of acute cellular swelling and fatty change. 3

3. a) Define pneumoconiosis and heart failure cells. 1
   b) Define pathological calcification. Differentiate between metastatic and dystrophic calcification. 1+2=3
   c) Define teratology. Enlist 10 developmental anomalies found in animals. 3

4. a) What is photosensitization? Explain the causes and mechanisms of hepatogenous photosensitization. 1+3=4
   b) Show the mechanism of brown induration of lung in sketch form. 3

5. a) Describe in vivo properties of neoplasm. 5
   b) Mention the name of benign and malignant neoplasms found in the following tissues. 2
   i) Epidermis, ii) Bone, iii) Skeletal muscle, iv) Blood vessels

6. a) Define jaundice. Explain the mechanism of hemolytic and obstructive jaundice. 1+4=5
   b) Classify the Vanden Bergh test results in various types of jaundice. 2

SECTION-B

7. a) Describe the microscopic changes found in dead cells. 5
   b) Differentiate apoptosis from accidental cell death in a tabular form. 2

8. a) What types of necrosis are found in case of diphtheria and TB? Write down their gross and microscopic lesions. 5
   b) What type of necrosis is found in CNS? Why? 2

9. a) Mention the known causes of neoplasm. How can radiation induce neoplasm? 4
   b) Enlist five parasites and five viruses which can produce neoplasm. 3

10. a) What type of gangrene will be found in lung? Write down its gross and microscopic lesions. 3
    b) Write down the significance of gangrene. 3
    c) What is albinism? 1

11. a) Define infarct. Describe the causes, gross and microscopic lesions of infarct. 1+3=4
    b) What types of infarct are found in heart, intestine, kidney and brain? 1
    c) Write down the fate of necrotic tissues. 2

12. Write short notes on (any two) 3.5x2=7
    a) Gout
    b) Bronze diabetes
    c) Hypertrophy

Chattogram Veterinary and Animal Sciences University

DVM 2nd year 1st Semester Final Examination 2021

Course Title: Platyhelminthes and Malacology (Theory)

Course code: PLM-201 (T)

Full Marks: 70, Time: 3 Hours

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

SECTION-A

1. a) Explain different types of animal association with example. 3
   b) Illustrate the factors affecting distribution of parasites and major harmful effects of parasites on their host. 4

2. a) Draw and label a typical trematode. 3
   b) Sketch the life cycle of a digenetic trematode. 4

3. a) Define metacestode. Briefly describe the different types of metacestodes with example. 4
   b) Write down the rules concerning zoological nomenclature of parasites. 3

4. a) Explain economic importance of different molluscs. Enlist the name of five snails with their vector importance. 4
   b) Mention the general control measures of snails in rural Bangladesh. 3

5. a) Define Parasite. Classify parasites on the basis of duration, the laying stages, the habitat of the parasite on/in host and pathogenicity with examples. 4
   b) Discuss the immunity and resistance? Write down the factors responsible for breaking down of immunity. 3

6. Write short notes (any two) 3.5x2=7
   a) Swimmer's itch b) Gid disease c) Hydatid cysts d) Bottle jaw

SECTION-B

7. a) Compare between the following terms: 7 (any Seven) 1x7=7
   i) Facultative and obligatory parasite ii) Transport and paratenic host
   iii) Mutualism and Symbiosis iv) Carrier and Reservoir host v) Histozoic and Coelozoic parasite vi) Cyclophyllidae and pseudophyllidae vii) Eggs of Cestode and Trematode viii) Vectors and carriers ix) Parasitosis and parasitiasis

8. a) Draw and label mature proglottid of a typical cestode. 3
   b) Write down the name of genera, infective stages and cercariae of the members of following families: i) Dicrocoeliidae ii) Paramphistomatidae iii) Schistosomatidae iv) Fasciolidae 4

9. a) Enlist five important cestodes and trematodes of poultry available in Bangladesh. 3
   b) Write down the morphology, life cycle and pathologic significanc of *Davainea proglottina* infection in chicken. 4

10. a) Differentiate between the life cycle events blood fluke and liver fluke in cow. 4
    b) How do you diagnose the following parasitic infection in a clinical pathology laboratory? any three (3) 3
    i) Fascioliasis ii) Monieziasis iii) Paramphistomiasis iv) Diphyllobothriasis

11. a) Enlist the important trematodes and cestodes of dogs and cats 3
    b) Illustrate the life cycle and pathogenic significance of echinococcosis in a bitch. 4

12. a) What is snoring disease? How "the nasal granuloma" develop in cow? 4
    b) "Immature amphistomes are most pathogenic than the adults"- Explain. 3

Chattogram Veterinary and Animal Sciences University

DVM 2nd year 1st Semester Final Examination 2021

Subject: Environmental Hygiene and Bio-security (Theory)

Course code EHB: -201 (T)

Full Marks: 35, Time: 2 Hours

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

SECTION-A

1.	a)	Define animal hygiene. Briefly describe the scope of animal hygiene.	4.0
	b)	List 10 water borne diseases.	2.0
2.	a)	Classify soil on the basis of physical nature.	3.0
	b)	List 5 soil borne diseases of different animal with their causative agents.	3.0
3.	a)	What are the functions of water?	3.0
	b)	State the dissolved impurities of water.	3.0
4.	a)	Define the following term; Biological hygiene, aerosol, nitrification and hygros capacity	3.0
	b)	Briefly describe the steps you will follow for the sanitary improvement of the poultry farmyard	3.0

SECTION-B

5.	a)	Define fumigation. Briefly describe the potassium permanganate method for fumigation of large poultry farm.	3.0
	b)	Interpret the major veterinary implications due to the influence of drastic climate.	2.0
6.	a)	Point out the factors and channels of the poultry farm that are involved in the entry of the infectious disease.	2.0
	b)	Enlist water borne bacterial and protozoal diseases. How will you determine the hygienic value of water?	4.0
7.	a)	Briefly describe the conceptual bio-security for the establishment of dairy farm.	2.0
	b)	What are the measures you should be taken for prevention and control of infectious diseases? Briefly describe the quarantine process for newly imported animals.	4.0
8.	a)	Suppose a dairy cow suddenly died due to anthrax. What are the precautions you will take during the transportation of the carcass?	2.0
	b)	Write down the following short notes: i) Radiation injury on livestock ii) Biogas plant	2+2=4

Chattogram Veterinary and Animal Sciences University

DVM2nd year 1st Semester Final Examination 2021

Subject: Animal Genetics (Theory)

Course Title: AGN-201 (T)

Full Marks: 70, Time: 3 Hours

(Figures in the right margin indicate full marks. Answer **Three (3)** questions from each section, where question No. **1** and **5** arecompulsory. Use separate answer script for each section. Fractions of the questions must be answered together)

SECTION-A

1.	a)	Define gene, genome, heredity and variation.	2.0
	b)	Discuss the scope and application of genetics in livestock production.	5.0
	c)	Distinguish between i) Dominance and epistasis ii) Linkage and independent assortment.	4.0
2.	a)	Define allele, multiple alleles, genotype and heterozygous with example.	4.0
	b)	What do you mean by co-dominant gene action? Demonstrate co-dominant gene action with an example in cattle.	4.0
	c)	Explain different kinds of linkage.	4.0
3.	a)	Illustrate sex linked, sex influenced and sex limited traits with example.	4.0
	b)	Explain the methods of sex determination in animals.	4.0
	c)	What is chromosomal aberration? Illustrate the types of chromosomal aberration.	4.0
4.	a)	Draw and label the double helix structure of DNA and state its properties.	4.0
	b)	What are the causes and types of mutation.	4.0
	c)	Explain the phenotypic effects of mutation in farm animals.	4.0

SECTION-B

5.	a)	Define genetic code, codon and gene expression.	3.0
	b)	Describe the characteristics of genetic code.	5.0
	c)	State Mendel's laws of inheritance with genotypic and phenotypic ratios.	3.0
6.	a)	Illustrate the arrangement of linked gene on a chromosome.	4.0
	b)	Describe briefly, how a genetic map can be constructed.	6.0
	c)	What are the significances of genetic mapping?	2.0
7.	a)	Compare prokaryotic and eukaryotic genomes.	3.0
	b)	Summarise types of genetic disorders with examples in animal species.	6.0
	c)	Explain how do polyploidy occur in a population.	3.0
8.	a)	Generate a table with different classes of RNA and their functions.	4.0
	b)	Point out the post-transcriptional modifications of RNA.	4.0
	c)	Prepare a short note on "aneuploidy".	4.0

Chattogram Veterinary and Animal Sciences University

DVM 2nd year 1st Semester Final Examination 2021

Subject: General Microbiology (Theory)

Course code GMC: -201 (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

1. What do you mean by the Germ theory of disease? Write down the significant breakthrough and discoveries towards the establishment of Germ theory. 7.0

2. What do you mean by bacterial nutrition? Classify the bacteria on the basis of mode of nutrition. 2+5=7

3. What is sterilization? How many types of sterilization methods are usually used in a microbial laboratory? 7.0

4. Mention the function of bacterial i) Cell wall, ii) Cell membrane iii) Capsule iv) Flagella 2+2+ 2+1=7

5. Describe the basic requirements for and steps of protein synthesis in bacteria. 7.0

6. Describe different kinds of plasmids seen in bacteria. With a typical diagram show the basis steps of cloning of a foreign in suitable bacteria. 7.0

7. Define Thermal death time of a microorganism? Give the characteristics of an ideal disinfectant. 7.0

SECTION-B

8. Draw and label a typical bacterium and classify bacteria on the basis of morphologic features. 7.0

9. Why moisture and pH in media and temperature in incubator are required to be adjusted according to the organisms of interest for ensuring their optimum growth? 7.0

10. Where genetic code, codon and anticodon are located in bacteria? Describe the pathway and steps of DNA synthesis in bacteria. 7.0

11. Differentiate between mutation and genetic recombination seen in bacteria? Write down the molecular basis of different kinds of mutation seen in bacteria. 7.0

12. How do fungi reproduce? Give the common characteristic of yeasts. 7.0

13. What are the major animate sources of microorganisms to infect healthy animals? 7.0

14. Give the common characteristics of fermentation and respiratory catabolism occurred in bacteria. What do you mean by synchronous and non-synchronous growth of bacteria when they grown into liquid media. 7.0

Chattogram Veterinary and Animal Sciences University
DVM 2nd Year 1st Semester Final Examination 2021
Course Title: Zoo, Wild and Laboratory Animal Management (Theory)
Course Code: ZAM-201 (T)
Full Marks: 70, Time: 3 Hours

(Figures in the right margin indicate full marks. Answer **Three (3)** questions from each section, where question No. **1** and **5** are compulsory. Use separate answer script for each section. Fractions of the questions must be answered together)

SECTION-A

1. Differentiate the following terms (any five) 5×1=5
   a) Zoo and Safari Park
   b) Manipulative and custodial management of wildlife
   c) Ecology and environment
   d) *In situ* and *ex situ* conservation
   e) Biodiversity and climate change
   f) National forest and national park

2. a) "Conservation of wildlife is essential to protect the biodiversity" – justify. 3.0
   b) Suppose you have been recruited as a wildlife ecologist under the ministry of environment, forest and climate change. How will you improve the ecology of forest for the wild animal? 3.0

3. a) Write down the prospects and problems of rabbit farming in Bangladesh. 3.0
   b) What factors should you consider to formulate the ration for the wild animal? 3.0

4. a) "Sundarbans are shrinking gradually"- do you agree or disagree? What are the reasons behind and how should you prevent them? 3.0
   b) Discuss the current scenario of wildlife in Bangladesh. What are the causes of extinction of wildlife and how should you prevent them? 3.0

SECTION-B

5. a) Differentiate stochastic and deterministic causes of extinction of wildlife. 3.0
   b) Discuss the importance of captive breeding. Briefly explain the process of translocation of captive bred animals in the forest. 3.0

6. a) Define ecosystem dynamics. Briefly discuss the energy flow in the ecosystem dynamics. 3.0
   b) Briefly discuss the WWF, WAZA and IUCN with their objectives, mission and vision. 3.0

7. a) Categorize the wildlife habitat. Briefly discuss the components of wildlife habitat. 3.0
   b) Discuss the possible ways of habitat enrichment programs in the forest. 3.0

8. Elaborate the following terms (any six): 6×1=6
   a) Ecological succession
   b) Umbrella species
   c) Key stone species
   d) Biosphere
   e) Emigration
   f) Territory
   g) Wildlife sanctuary