102

Chittagong Veterinary and Animal Sciences University
DVM 2nd Year 1st Semester Final Examination, 2014
Course Title: Biochemistry I&II (Theory)
Course Code: BIC-201
Full Marks: 70, Time: 3 Hours

Figures in the right margin indicate full marks. Answer any **3 (three) questions** from each section of which Question No. **1 and 5 are compulsory**. Use separate answer script for each section.

Section-A

1. a) What is biomolecules? Distinguish of various macromolecules in terms of definition, percentage, role and constituents. **4**
   b) Show the structure of β-L- galactose. Write down the anomer and epimer of it with structure. **3**
   c) What are the differences among Amylose, Amylopectin, Glycogen and Cellulose? **2**
   d) Write short notes on the following: (i) Glycoprotein (ii) Proteoglycan. **2**

2. a) Define essential amino acids. List the essential amino acids of dog and cow. Write down the structure of sulpher containing essential amino acid. **3**
   b) Briefly discuss denaturation of protein. Why enzyme hydrolysis is preferable over acid or alkali hydrolysis? **3**
   c) Write the structure of ω_3 and ω_6 fatty acid. Why these types of fatty acids are important for human health? **3**
   d) Show the structure of cholesterol. Write a short note on lipoprotein. **3**

3. a) Write down the structure of cAMP, UTP, TDP. **3**
   b) Describe the functions of different types of RNA. **3**
   c) Show the structure of carbohydrate present in RNA. Write down the structure of the following peptide: G-L-T-D-Q. **3**
   d) Define (i) Annealing (ii) T^m (iii) Melting point (iv) Initial codon (v) Transcription (vi) Nucleoside. **3**

4. a) Discuss different types of enzyme specificity. **3**
   b) Classify enzyme. Give one example of each. **3**
   c) Briefly discuss "lock and key theory" and "induced fit theory". **3**
   d) Define mucopolysaccharides. Write down the functions of the following glycosaminoglycans: (i) Hyaluronic acid (ii) Heparin. **3**

Section-B

5. a) Which cofactor is involved with transamination? Give its structure. How does transamination occur? **4**
   b) What is meant by the terms glucogenic and ketogenic amino acid? Which amino acids are purely ketogenic? **3**
   c) Outline the reactions of the urea cycle. **4**

6. a) If you see a DNA structure simply written as CATAGCCG, what exactly does this means in terms of a double-stranded structure? Explain your answer. **2**
   b) Why is TTP used in DNA synthesis-Why not UTP as in RNA? **2**
   c) Which of the following components do not belong to the series? CTP, UTP, DNA, ATP, GTP, RNA. **2**
   d) In what way does RNA synthesis differ from DNA synthesis? **3**
   e) "Ruminant lives on gluconeogenesis"-Explain it. **3**

7. a) Write down the fate of glycerol and free fatty acids. **3**
   b) Define β-oxidation. Write down the oxidation steps in β-oxidation of fatty acids. **4**
   c) Write down the role of carnitine in fatty acid oxidation. **2**
   d) Define lipoprotein. Write down the functions of different lipoproteins. **3**

8. Write short notes any **four (4)** of the following: (i) Cori-Cycle (ii) ETC (iii) TCA-cycle (iv) Protein biosynthesis (v) Amino acid pool. **4×3=12**

Chittagong Veterinary and Animal Sciences University
DVM 2nd Year 1st Semester Final Examination, 2014
Course Title: Basic and Circulatory Physiology (Theory)
Course Code: BCP-201
Full Marks: 70, Time: 3 Hours

(Figures in the right margin indicate full marks. Answer any **3 (three)** questions from each section of which Question No.**1 (One) & 5 (Five)** are compulsory. Use separate answer scripts for each section.)

Section-A

1. a. What are the organelles present in the cytoplasm of a mammalian cell? 3
   b. State the functions of endoplasmic reticulum, golgi apparatus, peroxisomes and cell membrane. 4
   c. Mitochondria is called 'Power house of the cell'- Justify this point. 4

2. a. Write down the composition of blood plasma. 4
   b. What are the derivatives of haemoglobin? 4
   c. Discuss the role of erythropoitin in the regulation of RBC production. 4

3. a. What are the possible ways by which substances can pass through a cell membrane? Briefly describe the physiological importance of diffusion. 4
   b. Differentiate (i) Diffusion and Osmosis (ii) Active transport and Passive transport 4
   c. What do you mean by pinocytosis? Sketch the mechanism of phagocytosis. 4

4. a. Mention the physiological phenomena of a living organism. 3
   b. Define exocytosis, endocytosis and transcytosis. 3
   c. Differentiate the following: 2×3=6
      i. Simple diffusion versus Facilitated diffusion.
      ii. Primary active transport versus Secondary active transport.
      iii. Colloidal versus Crystalloid.

Section-B

5. a. What is Na^+-K^+ pump? What is the physiological significance of this pump in cell? 4
   b. Define action potential. Briefly describe the stages of action potential with figure. 4
   c. Classify solutions on the basis of osmotic pressure with example. 3

6. a. Where does the conduction of heart start? Write it's spreading sequentially? Discuss the conduction of impulses in the myocardium during heart beat. 4
   b. Classify blood vessels with examples. 4
   c. How does heart beat can be regulated? Briefly describe the autonomic regulation of heart beat. 4

7. a. What are the physiological adaptations in fetal circulation? Sketch the fetal circulation. 4
   b. What are the functions of systemic circulation? 4
   c. Enlist the functions of heart valves. 4

8. Write short notes (any four) 3×4=12
   (a) Erythroblastosis fetalis.
   (b) Mechanism of lymph formation.
   (c) Intrinsic pathway of blood coagulation.
   (d) Synovial fluid.
   (e) Heart sound.
   (f) Cardiac output.

Chittagong Veterinary and Animal Sciences University
DVM 2nd Year 1st Semester Final Examination, 2014
Course Title: General Microbiology (Theory)
Course Code: GMC-201
Full Marks: 70, Time: 3 Hours

201

(Figures in the right margin indicate full marks. Answer any **3 (three)** questions from each section of which Question No.**1 (One) & 5 (Five)** are compulsory. Use separate answer scripts for each section.)

Section-A

1.	a.	Describe the contribution of Alexander Fleming in the field of antimicrobial therapy.	2
	b.	Write down the protoplasmic apparatus of bacterial cell.	6
	c.	Classify bacteria on the basis of flagellar distribution.	3
2.	a.	Differentiate between prokaryotic and eukaryotic cells.	6
	b.	Classify bacteria on the basis of carbon utilization.	3
	c.	Write down the role of hyrdrogen ion concentration on bacterial growth.	3
3.	a.	Describe a standard bacterial growth curve.	6
	b.	Enumerate the characteristics of bacterial endotoxin.	3
	c.	Write a short note on generation time of bacteria.	3
4.	a.	Describe the alternative pathway of complement activation.	5
	b.	Write down the role of macrophages in the defense mechanism of body.	3
	c.	What do you mean by bacterial virulence factor? Explain how do the virulence factors help in the establishment of infection?	4

Section-B

5.	a.	Define genome, codon and anticodon.	3
	b.	What is bacterial mutation? Differentiate between point mutation and deletion mutation.	4
	c.	Explain with diagram the process of conjugation between F+ and F- bacteria.	4
6.	a.	What are the portal of entry through which microorganism can enter into a host body?	3
	b.	Sketch the progress of bacterial infection and various defense mechanisms of the body.	4
	c.	Describe the circumstances and factors of predisposing to infection	5
7.	a.	Classify fungus on the basis of morphology.	3
	b.	Write down the anamoprhic and telemorphic pathways of fungal reproduction.	5
	c.	Enumerate the methods of obtaining a pure culture of bacteria.	4
8.		Write short notes on any three	3×4=12
	a)	Robert Koch	
	b)	Plasmid	
	c)	Mycotoxin	
	d)	Bacteriological media	

Chittagong Veterinary and Animal Sciences University
DVM 2nd Year 1st Semester Final Examination 2014
Course Title: Zoo & Lab. Animal Management (Theory)
Course Code: ZAM-201
Full Marks: 55, Time: 3 Hours

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

Section-A

1. a) Write down the zoological classification of guineapig and samber deer. 2
   b) Mention the common name and scientific name of six common zoo and laboratory animals. 3
   c) Differentiate zoo from safari park. What sort of facilities need to be available in a modern zoo? 4

2. a) Differentiate zoo animals from laboratory animals. 2
   b) What do you mean by endangered species of animal? 2
   c) Discuss the criteria for selection of site for a modern zoo. Draw and label the layout of a tiger enclosure. 5

3. a) List the salient features for an ideal wildlife habitat. 3
   b) What do you mean by wildlife transportation and translocation? Write down the procedure for transportation of elephant. 4
   c) What is zoo animal welfare? Name some important wildlife welfare organization. 2

4. a) What is restraining? Discuss different types of wildlife restraining. 3
   b) Suppose a fishing cat has come out from its enclosure. How will you manage the cat as a veterinarian? 4
   c) Write down the restraining procedure of mice in laboratory premise. 2

Section-B

5. a) Discuss the feeding behavior of python. 3
   b) Give a balanced diet for a spotted deer and a crocodile. 4
   c) Suppose a hungry monkey has entered into a public place to take groundnut from a nearby shop and the people near the shop are ready to kill her. As a veterinarian, how should you save the monkey? 3

6. a) How will you manage an orphan calf of a barking deer? 4
   b) Write down the routine sanitation activities of a modern zoo in a metropolitan area. 5

7. a) Write down the breeding behavior of black bear. 2
   b) What is biodiversity? Discuss the consequences of biodiversity in wildlife. 4
   c) Mention the age of puberty, mature weight, gestation period and litter size of tiger. 3

8. a) What is conservation? Briefly discuss the importance of wildlife conservation. 3
   b) Briefly discuss the "DO'S AND DONT'S" in perspective to the captive management. 4
   c) Briefly discuss the IUCN criterion. 2

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Chittagong Veterinary and Animal Sciences University
DVM 2nd Year 1st Semester Final Examination, 2014
Course Title: Animal Production (Cattle & Buffalo) Theory)
Course Code: APR -201
Full Marks: 70, Time: 3 Hours

Figures in the right margin indicate full marks. Answer any **3 (three) questions** from each section of which Quuestion No. **1 and 5 are compulsory**. Use separate answer script for each section.

Section-A

1. a) State the taxonomy of taurine cattle and water buffalo. Why has the adjective "water" been added before domestic buffalo? 6
   b) State the climatic influence on adaptability for cattle with a short note on "effect of solar radiation on cattle rearing" 5

2. a) State different types of beef cattle industries across the globe. 3
   b) Briefly discuss the different phases of beef cattle production. 4
   c) Briefly discuss the important factors, while selecting a beef breed for Bangladesh. 5

3. a) What do you mean by 'heifer' and 'replacement heifer'? State the process of raising replacement heifer. 4
   b) Outline the immediate care and management of newborn calves. 4
   c) Discuss the feeding and management practices of parturient cows and buffaloes. 4

4. Write short notes (any three) 3×4= 12
   a) Silent heat; b) Feeding dairy cattle; c) Selection of breeding bull; d) Cattle breeding policy in Bangladesh; e) Daily routine work in a semi-intensive cattle farming; and f) Free Martin.

Section-B

5. a) Write the common names of buffalo in Bangladesh, India, Pakistan, Arabian countries, Thailand, Malaysia and the Philippines. 3
   b) Classify buffaloes. 3
   c) State the common difficulties being prevailed in Bangladesh for buffalo farming. Enumerate your suggestions to overcome those impediments. 5

6. a) Classify cattle on the basis of utility. Give two examples in each case. 4
   b) Name five breeds of draught cattle of Indo-Pak subcontinent with description of salient features of any one of them. 4
   c) Present a note on "Training draft cattle for ploughing or cart-pulling." 4

7. a) What are the causes of poor reproductive performance of buffalos? 2
   b) How does a buffalo regulate body temperature? 2
   c) Mention the causes of mortality in buffalo calves. 2
   d) Write a note on 'buffalo farming in bathan'. 6

8. Write short note (any three) 3×4= 12
   a) Feeding dry cattle; b) Process of drying off; c) River type buffalo; d) Tamarao;
   e) Prevention of cattle diseases in semi-intensive farming; and f) Backyard cattle farming.

Chittagong Veterinary and Animal Sciences University
DVM 2nd Year 1st Semester Final Examination, 2014
Course Title: Platyhelminthes and Malacology (Theory)
Course Code: - PLM-201
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) Define and classify resistance to parasitic infection with example. 4
   b) What are the factors responsible for breaking down host immunity against parasitic infection? 3

2. a) Briefly describe the various routes of parasitic infection. 3
   b) Describe the life cycle, pathologic significance and control measures of circling disease in goat. 4

3. a) Describe the morphology of *Dricrocoelium dendriticum* and *Schistosoma nasalis*. 4
   b) How will you diagnose and control schistosomiasis in cattle? 3

4. a) Briefly describe the factors affecting the host specificity. 3
   b) Differentiate between the followings (any two): 4
      (i) Trematode and Cestode,
      (ii) Reservoir host and carrier, and
      (iii) Facultative parasite and obligatory parasite.

5. a) What is anthelmintic? Write down the characteristics of an ideal anthelmintic. 4
   b) Enlist veterinary and medical important snails found in Bangladesh. 3

6. a) Mention the morphological differences between *Moniezia expansa* and *M. benedeni*. 3
   b) Write a short note on hydatidosis. 3
   c) Enlist the zoonotic important flukes and tapeworms. 1

Section-B

7. a) Define parasite and host. Classify parasites into different categories with example. 4
   b) Write down the general effects of parasite on their hosts. 3

8. a) Explain briefly the morphological features of digenetic trematode with diagram. 4
   b) Sketch the life cycle of *Dricrocoelium dendriticum*. 3

9. a) How will you differentiate *Taenia solium* from *T. saginata* morphologically? 3
   b) Briefly describe the life cycle and control measures of *T. saginata*. 4

10. a) What are the important features of Cyclophyllidia tape worms? 3
    b) Sketch the life cycle of *Diphyllobothrium latum* and mention it's pathologic significance. 4

11. a) Enlist the important tapeworms of poultry with their host and predilection site. 3
    b) Briefly describe the life cycle and pathologic significance of *Raillietina* spp. 4

12. a) Describe the life cycle and pathogenesis of liver fluke infection in sheep. 5
    b) What do you mean by "Swimmer's itch"? How it is produced? 2

Chittagong Veterinary and Animal Sciences University
DVM 2nd Year 1st Semester Final Examination, 2014
Course Title: General Pathology-I (Theory)
Course Code: GPT -201
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) Define and classify cell death. Give the nuclear changes of a dead cell. 4
   b) Differentiate accidental cell death from programmed cell death in a tabular form. 3

2. a) List the outcomes of necrotic tissues. In your opinion which one is the most beneficial and worst outcome of necrosis and why? 4
   b) Write down the causes and significance of gangrene. 3

3. a) Give the schematic diagram of hypoxic cell injury. 5
   b) Discuss the gross changes of dead tissues. 2

4. a) Classify necrosis. Write down the causes of liquefaction necrosis. 2
   b) Which mechanisms are involved in liquefaction of CNS and abscesses? 2
   c) Give the causes, gross & microscopic appearance and significance of fat necrosis. 3

5. a) Define and classify infarcts. Can you mention the name of certain organs where outcome of infarction is fatal? 4
   b) Write down the microscopic lesions of caseation and Zenker's necrosis. 3

6. a) Define and classify gout. Give the pathogenesis and causes of gout. 4
   b) What do you mean by anthracosis? Write down the causes and significance of it. 3

Section-B

7. a) Mention the purposes of pathology. 2
   b) Who is known as the father of medicine and why? 2
   c) Mention the contributions of Aristotle, Ptolemy and Cornellius Celsus in the field of medicine? 3

8. a) What do you mean by degeneration and infiltration? 2
   b) Describe the basic mechanisms involved in the pathogenesis of fatty change. 5

9. a) What type of pigment is produced in lung when there is chronic passive congestion in it? Write down the gross and microscopic lesions of this pigment. 4
   b) Describe the causes and mechanism of toxic jaundice. 3

10. a) Show the mechanism of photosensitization in sketch form. 2
    b) Write down the causes and mechanism of hemolytic jaundice. 3
    c) How will you differentiate melanoblasts from melanophages? 2

11. a) What type of gangrene is found in lungs? Write down it's microscopic lesions. 2
    b) Mention the conditions which indicate postmortem autolysis during necropsy. 2
    c) Write down the microscopic lesions of fatty change and amyloidosis. 3

12. a) What type of calcification is found in chronic caseous necrosis? Write down it's gross and microscopic appearance. 4
    b) Write down the occurrences and causes of pathologic ossification. 3

Chittagong Veterinary and Animal Sciences University
DVM Second Year First Semester Final Examination, 2012
Course Title: Basic and Circulatory (Theory)
Course Code: BCP-201
Full Marks – 70; Time: 3 hours

(Figures in the right margin indicate full marks. Answer any three **(3)** questions from each section of which Questions 1 and 5 are compulsory. Use separate answer scripts for each section)

Section-A

1. a. Draw and label a typical animal cell. 3
   b. State the functions of a cell membrane, mitochondria and endoplasmic reticulum. 3
   c. State how a cell volume is maintained. 5

2. a. List the physiological phenomena exist in the body. 3
   b. Differentiate osmosis from diffusion. Classify solutions on the basis of osmotic pressure. 5
   c. State the factors regulating the net rate of diffusion. 4

3. a. What is hemagglutination? Classify different types of hemagglutination. 4
   b. List the blood coagulation factors. 3
   c. Briefly describe extrinsic mechanism of blood coagulation. 5

4. a. Name the junctional tissues of heart. 2
   b. State the conduction of impulses through myocardium during a heart beat. 5
   c. Define heart block. State different types of heart block. 5

Section-B

5. a. Write down the composition of blood. 3
   b. What are the principle plasma proteins of blood? Enumerate their functions. 3
   c. How urobilinogen is formed from a degraded RBC? 4
   d. Cite the functions of basophil. 1

6 a. Define lymph. 1
   b. How lymph is formed in the body? Briefly describe. 5
   c. List the functions of cerebrospinal fluid and synovial fluid. 3
   d. What are the functions of tissue-macrophage system? 3

7 a. Define erythropoiesis and granulopoiesis. 2
   b. Why blood is not coagulated inside the blood vessel? 3
   c. Write down the role of hepcidine and erythropoietin in erythropoiesis. 4
   d. Why does erythroblastosis fetalis occur in an off-spring from Rh^{+ve} father and Rh^{-ve} mother? 3

8 Write short notes on any four: 4*3=12
   a. Phagocytosis
   b. Blood pressure
   c. Vasoconstriction
   d. Regulation of heart
   e. Blood groups