

102

Chittagong Veterinary and Animal Sciences University

DVM 2nd Year 1st Semester Final Examination 2011

Subject Title: Biochemistry I & II (Theory)

Course Code: BIC-201

Full Marks -70; Time: 3.0 Hours

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

SECTION-A

1. a. Write the structure of α -D fructose and epimer and enantiomer of α -D glucose. 3
b. Give evidence of ring structure of glucose. 3
c. Show the difference among amylose, amylopectin and glycogen. 3
d. Write down the importance of cellulose and lignin in ruminant nutrition. 2

2. a. Show the structure of any oil. Explain why soybean oil is more stable than beef fat. 3
b. Write the structure of phospholipids and steroid. 3
c. Define the following terminology: 3
 Saponification number, Iodine number and RM value. 3
d. Distinguish between the following pairs: 3
 Apoenzyme and Holoenzyme and specific activity and turn over number.

3. a. What is an enzyme? Explain the mode of action of enzymes. 4
b. Write down the Michaelis-Menten Equation for enzyme catalyzed reaction and from prove that $K_m = [S]$ at $\frac{1}{2} V_{max}$. 4
c. Define coenzyme. Name the coenzymes which are involved in the following group transferring reaction: 4
 Hydrogen, Aldehyde and Acyl group.

4. a. Show the structure of ATP and TMP. 2
b. Point out the characteristics of Watson-Crick model of DNA. 3
c. Write down Chargaff's rule. 3
d. Give evidence that nucleic acid acts as genetic material. 4

Section-B

5. a. "V-M-Y-Y-E-N"-this is the single letter of amino acid abbreviation for a peptide. Draw the structure of this peptide. 4
b. A protein sample is submitted by a client and asks for determining the primary structure of protein. How do you determine the amino acids sequence in that protein sample? 4
c. Classify proteins. Describe the forces responsible for protein structures. 3

6. a. Write down the activation step of β -oxidation. Calculate ATP production in complete oxidation of stearic acid. 3
b. Define ketosis. How ketone bodies are formed? 3
c. Write the reactions of β -oxidation where $NADH^+H^+$ and $FADH_2$ are produced. 3
d. Define phosphorylation. Show the reaction of substrate level phosphorylation that takes place in TCA cycle. 3

7. a. Write down the functions of metabolism. 2
b. Write down the steps of glycolytic pathway in which ATP is produced. Mention the enzymes and coenzymes involved in this process. 3
c. "TCA cycle is the most common pathway of metabolism"-justify this statement. 3
d. How is blood glucose regulated? 3

8. Write short notes on any four of the followings: 4×3=12
 - a. Cori's cycle
 - b. Glycogenolysis
 - c. Deamination
 - d. Amino acid pool
 - e. Lipoproteins

201

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

Section-A

1. (a) Define necrosis, heterolysis and autolysis. 3
(b) What is apoptosis? Give the examples of pathologic and physiologic apoptosis. 4
Differentiate apoptosis from accidental cell death in a tabular form.
2. (a) What types of infarcts are found in heart, kidney, intestine, brain and spleen. 2
(b) Write down the significance and effects of gangrene. 3
(c) Write down the microscopic lesions of an infarct. 2
3. (a) Discuss the basic mechanisms involved in the pathogenesis of fatty change. 4
(b) Write down the gross and microscopic lesions of fatty change in different organs. 3
4. (a) Write down the causes and pathogenesis of hemolytic & toxic jaundice. 6
(b) What type of reactions is given by three types of jaundice during Vanden Bergh test. 1
5. (a) What is photosensitization? How photosensitization is produced? 3
(b) Write down the causes of hepatotoxic and primary photosensitization. 3
(c) How phenothiazine produce primary photosensitization? 1
6. (a) Write down the causes, microscopic lesions and significance of hemosiderosis. 5
(b) Differentiate homosiderosis from hemochromatosis. 2

Section-B

7. (a) What are the factors that may influence the time of occurrence of post mortem change? 3
(b) Enlist the causes of necrosis. 2
(c) What do you mean by the term "Pathogenesis"? Explain with example. 2
8. (a) Prepare a list of lipogenic and lipotropic pigments. 2
(b) What are the names of photodynamic pigments of plant and animal origin? 2
(c) Write down the mechanism of formation of heart failure cell. 3
9. (a) Write down the microscopic lesions of coagulation and caseation necrosis. 4
(b) Write down the causes and lesions of fat necrosis. 3
10. (a) Prepare a list of intra and extra cellular deposits that may occur due to metabolic disturbances. 2
(b) Write down the causes and lesions of amyloidosis. 5
11. (a) What is pathologic calcification? Write down the causes of metastatic calcification. 4
(b) How would you differentiate anthracosis from pneumoconiosis? Write down the significance of anthracosis in lungs. 3
12. Write short notes on any three. 7
(b) Bronze diabetes; (b) Gout;
(c) Glycogen storage diseases and (d) Toxic jaundice

Chittagong Veterinary and Animal Sciences University

DVM 2nd Year 1st Semester Final Examination, 2011

Subject: General Parasitology and Platyhelminthes (Theory)

Course Code: GPP-201

Full Marks – 70, Time: 3 Hours

201

(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) With example in each case describe the morphological features of the parasites belonging to the different genera of the family Fasciolidae. 4
(b) What is bladder worm? Briefly describe the different types of bladder worms causing harm in cattle. 3
2. (a) How an egg of tapeworm comes out from gravid proglottid? 2
(b) Describe the life cycle, pathogenic significance and control measures of *Echinococcus granulosus* infection in its final host and intermediate host. 5
3. (a) Write down the names of the body parts of an adult cestode and briefly describe the morphology of a mature proglottid. 4
(b) Differentiate between Pseudophyllidea and Cyclophyllidea. 3
4. (a) "The densities and distribution of parasites are largely dependant on the climatic condition and availability of intermediate hosts"-justify the statement. 2
(b) Discuss the various injurious effects of parasites on their hosts with example. 5
5. (a) Name the blood flukes of veterinary importance. Describe the life cycle, pathogenesis, clinical signs and diagnosis of a fluke causing nasal granuloma in cattle. 5
(b) Mention how the parasitic diseases is efficiently treated and controlled in a herd. 2
6. (a) Write down the names of the cercaria and infective stages of the members of the following families- i. Echinostomatidae ii. Fasciolidae 2
iii. Ophisthorchiidae iv. Schistosomatidae
(b) Write down the scientific names of the following parasites- 2
i. Poultry blood fluke ii. Lancet fluke
iii. Elephant liver fluke iv. Cat liver fluke
(c) List the morphological features of a typical digenetic trematode which is found in the gall bladder or in liver of cattle. 3

Section-B

7. (a) Define host and parasite. List different types of parasites with example. 3
(b) What is symbiosis? Differentiate between parasitism and commensalism. 2
(c) Define paratenic host and carrier host with example. 2
8. (a) Briefly describe the pathogenesis, clinical sign of echinostomiasis in birds 5
(b) "The immature amphistomes are more pathogenic than the adults"- explain. 2
9. (a) What do you mean parasitic immunity? 1
(b) Distinguish between- 6
i. Vectors and intermediate host ii. Hydatid cyst and *Coenurus* cyst
10. (a) What are the striking differences in the life cycles of liver and blood fluke of cattle. 4
(b) Describe the development of *Fasciola gigantica* and *Paramphistomum cervi* following ingestion of metacercaria by final host. 3
11. (a) Mention with diagram the morphological differences between *Moniezia expansa* and *Moniezia benedeni*. 4
(b) Define anthelmintics. Write down the characteristics of an ideal anthelmintic. 3
12. Write short notes on (any TWO):- 3.5x2 = 7
i. Slime ball
ii. Swimmers' itch
iii. Inverse age resistance

Chittagong Veterinary and Animal Sciences University
DVM 2nd Year 1st Semester Final Examination, 2011
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 **THREE** questions from each section where questions No.1 and 5 are compulsory. Use separate answer script for each section.)

Section-A

- | | | |
|----|--|---|
| 1. | a. Define second messenger. | 1 |
| | b. Enumerate the functions of two widely used second messenger | 4 |
| | c. Differentiate active and passive transport system. | 4 |
| | c. Cite the major examples of osmosis in animal body. | 2 |
| 2. | a. Define phagocytosis, endocytosis and pinocytosis. | 3 |
| | b. Describe the different steps of phagocytosis. | 4 |
| | c. Differentiate extracellular and intracellular fluids on the basis of their composition. | 3 |
| | d. List the functions of lymph. | 2 |
| 3. | a. Define erythropoiesis and haemopoiesis. | 2 |
| | b. Mention the role of kidney, liver, bone marrow and stomach in the erythrocyte production process. | 4 |
| | c. Write down the degradation process of haemoglobin. | 4 |
| | d. Write down the basic concepts of erythrocyte production. | 2 |
| 4. | a. Explain how do nutritional deficiencies lead to anaemia? | 1 |
| | b. Define haemostasis. | 1 |
| | c. Briefly describe the different ways of haemostasis mechanism. | 4 |
| | d. Differentiate the extrinsic and intrinsic ways of blood clotting. | 3 |
| | e. List the factors that accelerate and inhibit blood clot formation. | 3 |

Section-B

- | | | |
|----|---|--------|
| 5. | a. Draw and label a typical animal cell. | 3 |
| | b. State the functions of cell membrane, endoplasmic reticulum and ribosome. | 5 |
| | c. State how does Na ⁺ -K ⁺ pump work to maintain cell volume? | 3 |
| 6. | a. Write the composition of blood plasma. How does it differ from lymph? | 4 |
| | b. Narrate lymph formation in the body. | 5 |
| | c. List the functions of synovial fluid. | 3 |
| 7. | a. Write down the requirement of normal heart beat. | 4 |
| | b. Briefly describe the mechanism of regulation of heart rate. | 4 |
| | c. Describe hepato-portal circulation and state the advantages of such circulation in the body. | 4 |
| 8. | Write short notes on any three | 3×4=12 |
| | a. Heart block | |
| | b. Action potential | |
| | c. Donnan's theory of membrane equilibrium | |
| | d. Vasomotor mechanism | |

P

Chittagong Veterinary and Animal Sciences University
DVM 2nd Year 1st Semester Final Examination, 2011
Subject: 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 three questions from each section of which question 1 and 5 are compulsory. Use separate answer script for each section).

Section A

- | | |
|--|--------|
| 1. a) Discuss the direct effect of climate on cattle. | 4 |
| b) What are the existing breeding and housing practices of backyard dairying in Bangladesh? | 4 |
| c) Indicate the current trends in the use of draft power in Bangladesh. | 3 |
| 2. a) What is silage? | 2 |
| b) Mention the factors affecting the value of silage. | 4 |
| c) Indicate the strategies for feeding dairy cattle on low nutrient-content feeds. | 3 |
| d) How will you take care of new-born calf in terms of feeding? | 3 |
| 3. a) What is milking? List the procedures of milking. | 3 |
| b) Discuss the routine activities in a commercial dairy farm. | 4 |
| c) What is your impression on backyard dairy farm of Bangladesh? | 5 |
| 4. Write short notes (any four) | 4X3=12 |
| a) Record-keeping; b) Australian beef-cattle; c) Development history of Jersey and Guernsey; d) Residual and hold-up milk; e) White-faced cattle; and f) Drying-off. | |

Section B

- | | |
|---|---|
| 5. a) Mention the reasons behind not developing exclusive beef-cattle farming like broiler farming in Bangladesh. | 5 |
| b) Discuss the beef-cattle feeding standard suggested by Bangladesh Livestock Research Institute, BLRI. | 6 |
| 6. a) What do you mean by calf-starter and milk-replacer? | 3 |
| b) Mention the methods of separation of calves from dams after birth with relative merits and demerits. | 4 |
| c) Discuss briefly the care and management of calves from weaning to puberty. | 5 |
| 7. a) What do you mean by Selection and Judging? | 3 |
| b) Discuss the production systems of beef-cattle in the tropics. | 5 |
| c) Briefly discuss the common diseases of calves. | 4 |
| 8. a) Write the common breeds of buffaloes available in Bangladesh. | 3 |
| b) Discuss the adaptability mechanism of buffaloes in the nature. | 5 |
| c) Mention the economic importance of buffaloes in Bangladesh. | 4 |

✓ A
W
✱
201

Chittagong Veterinary and Animal Sciences University
DVM 2nd Year 1st Semester Final Examination, 2011
Course Title: Zoo and Laboratory Animal Management (Theory)
Course Code: ZAM-201
Full Marks: 55, Time: 3 Hours

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

Section-A

1. (a) How laboratory animals are serving for the well being of human survivability? Write down their important characteristics. 3
- (b) Briefly describe about the housing requirements of laboratory animals. 3
- (c) Write down the importance of bedding for laboratory animal with their characteristics. 3
2. (a) State the cleanliness and waste disposal system of the house of laboratory animals. 3
- (b) What should be the staffing pattern for a zoo? 3
- (c) What are the ethical points that should be consider for using laboratory animals in research? 3
3. (a) Write down the classification of vertebrates with examples mentioning orders of four classes. 3
- (b) Compare between zoo and safari park, Write down the objectives /functions of zoo. 3
- (c) Elaborate the abbreviation mentioning their mission/objectives of IUCN, SAZARC and CITES. 3
4. (a) Define restraining. Write down the importance of restraining zoo and wild animals. 3
- (b) Briefly describe about different methods of restraining zoo animals and bird. 3
- (c) Describe different types of tools used in chemical restraining of animals. 3

Section-B

5. (a) What do you mean by wildlife management? Shortly describe about different types of wildlife management. 4
- (b) Define animal ecology. Draw the ecology wheel mentioning its components. 4
- (c) Compare between conservation and preservation. 2
6. (a) Write down about general consideration while establishing a zoo. 2
- (b) Shortly describe about the nutrition of guineapig. 4
- (c) State about common diseases of rabbit. 3
7. (a) How can you define biological diversity? State genetic, species and ecosystem diversity. 4
- (b) What do you mean by extinction? What are the different processes responsible for extinction of animal species? 3
- (c) Write down the importance of conservation of nature. 2
8. (a) What characteristics should maintain for preparing diets of captive animals? 4
- (b) Indicate the different dietary problems may occur in a zoo. 3
- (c) When and how overfeeding is harmful for zoo animals rather than their extra nourishment? 2

Chittagong Veterinary and Animal Sciences University
DVM 2nd Year 1st Semester Final Examination, 2011
Subject: General Microbiology (Theory)
Course Code: GMC- 201
Full Marks: 70, Time: 3 Hours

✱

201

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

Section-A

1. (a) Give labeled diagram of a typical bacterium. 5
(b) Describe the physical, chemical nature and functions of bacterial cell wall. 6
2. (a) What is plasmid? With basic characteristics classify plasmids. 6
(b) Define F-factor and Hfr. Describe with labeled diagram the genetic recombination in bacteria through transduction mechanism. 6
3. (a) Define toxin, endo-toxin and mycotoxin. 3
(b) Describe the preparation process of toxoid. 6
(c) Define virulence, pathogenicity and pathotoxin. 3
4. Write notes on(Any three): 4x3=
(a) Disinfectants; (b) Mycoses; (c) Phenol coefficient of a disinfectant; (d) Bacterial Gram staining 12

Section-B

5. (a) Define prokaryotes. Classify bacteria based on flageller distribution. 3
(b) Write down the contributions of Louis Pasteur and Hippocrates in the development of medical bacteriology. 6
(c) Name some enriched media for cultivation of bacteria. 2
6. (a) List the Gram positive and Gram negative bacteria where natural transformation occurs. 3
(b) What is a dimorphic fungus? Illustrate the morphology of yeasts and molds. 5
(c) What are the basic steps for recombinant DNA technology? Mention the function of "r" determinant in drug resistance transfer(R) plasmids. 4
7. (a) Define the followings terms: 6
Glycocalyx, codon, anticoden, endospore, symbiosis, nosocomial infection.
(b) Classify bacteria based on temperature and oxygen requirements for growth. 6
8. (a) Differentiate between innate and adaptive mechanisms of host resistance. 2
(b) What is meant by fungi imperfecti? Write down the teleomorphic and anamorphic pathways of fungal reproduction. 4
(c) Briefly describe the protein synthesis in bacteria. 6