

Chattogram Veterinary and Animal Sciences University
Department of Physiology, Biochemistry and Pharmacology
MS in Biochemistry

July-December semester Final Examination 2019

Course Title: Advanced Metabolism

Course code: ADM-602

Full marks: 40

Answer any eight (8) questions.

1. What is DNA and how DNA copies itself? 5
2. What do you mean by gene knock in and gene knock out? Briefly describe the process. 5
3. Write down the name of enzymes those can regulate glycolysis and TCA cycle. Differentiate catalytic site and allosteric site of enzyme. 5
4. Briefly describe about energy transfer. 5
5. How metabolism is controlled by feedback inhibition? Explain with example. 5
6. How a protein (eg. Enzyme) is synthesis within the cell. 5
7. Shortly describe malate shuttle system and explain how 3 ATP is formed from 1 NADH₂? 5
8. DNA can also be synthesized from RNA-explain. 5
9. Write short note on: protein degradation, genetic code, codon, oxidative phosphorylation, anticodon 5

MS (Biochemistry) July-December Semester Final Examination-2019
Chattogram Veterinary and Animal Sciences University
Faculty of Veterinary Medicine
Department of Physiology, Biochemistry and Pharmacology
Course title: Animal Hormones
Course Code: ANH-602
Total Marks: 40

Answer any 8 questions and figure in the right margin indicate full marks

- 1 List the general functions of hormones? 5
- 2 List the organs that secrete hormone as their first function and those organs that secrete hormones as a secondary function. 5
- 3 Describe how hormones interact with receptor cell. Distinguish between circulating and local hormones 5
- 4 Describe the mechanism of action of lipid-soluble hormones? Explain the actions of eicosanoids. 5
- 5 Discuss the importance of the hypothalamus to pituitary gland function? 5
- 6 List the seven major hormones secreted by the anterior pituitary gland. Discuss the functions of parathyroid hormone. 5
- 7 Describe the formation, storage, and release of thyroid hormones. 5
- 8 Describe the three zones of the adrenal cortex and know which hormone is secreted by which zone and the functions of those hormones. 5
- 9 List the hormone-secreting cells of the pancreatic islet, the hormones they produce, and the functions of those hormones. 5
- 10 Describe the locations, hormones, and functions of the hormones of the gonads. 5

Chattogram Veterinary and Animal Sciences University
MS in Biochemistry July-December Semester Final Examination' 2019
Department of Physiology, Biochemistry and Pharmacology
Course Title: Biochemical Molecular and Immuno-diagnostics
Course Code: BMI-602

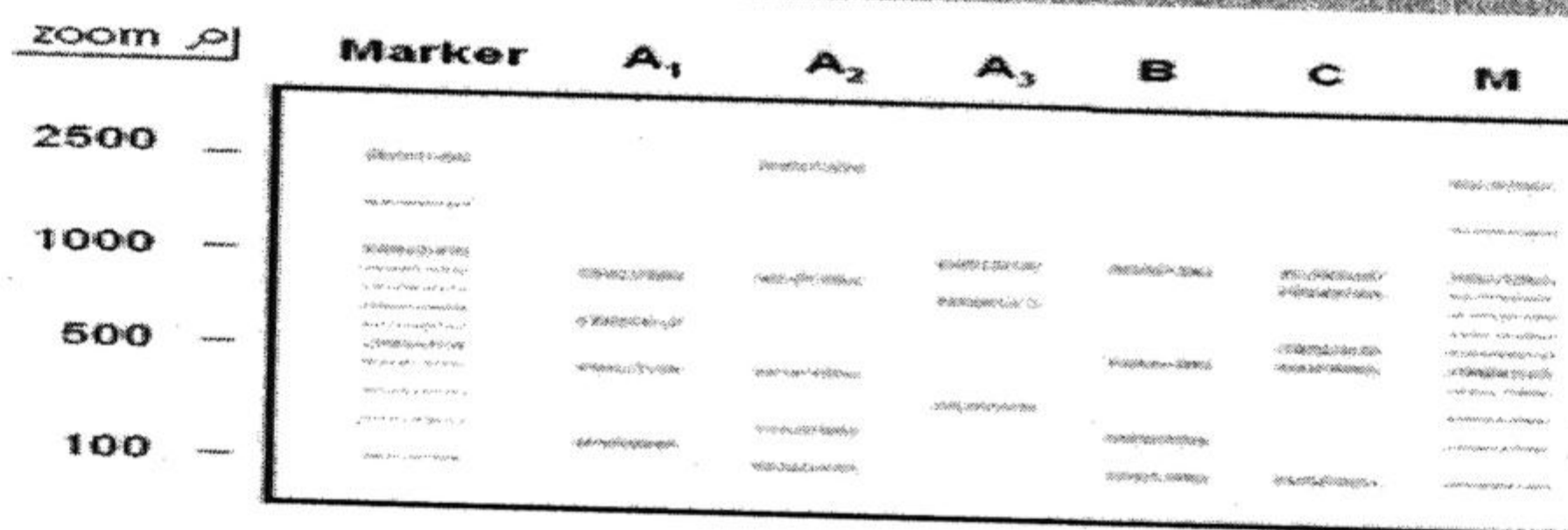
Full Marks: 40

Time: 2 hours

Answer any eight (8) of the following questions. Figure in the right margin indicates full marks.

1. a. Define hazards. What are the basic causes of hazards? 1+1
- b. How will you dispose specimens and contaminated materials originated from hospital? 3
2. a. Define the following terms: (i) Internal Standard, (ii) Primary Standard 2
- b. Enumerate the specific biomarker(s) of the following organ function disorders: 3
 (i) Renal (ii) Hepatic and (iii) Cardiovascular
3. a. What is CBC? Enumerate the methods for assessing different parameters of CBC. 2
- b. Describe the significance of the following tests: 3
 (i) ESR, (ii) HbA1c, (iii) Rh factor.
4. Define electrophoresis. Describe various methods of electrophoresis. 5
5. a. DNA typing is one of the most reliable and conclusive methods available for the identification of an individual-Explain. 3
- b. Illustrate the organization of the human genome. 2
6. a. Differentiate between Minisatellite and short tandem repeat. 2
- b. 3

Paternity



Assuming C is a parent of B, who is the other parent (A₁, A₂ or A₃)?

7. Define PCR. Describe the PCR with its application. 1+4=5
8. What are tumor markers? How are tumor markers used? 2+3=5
9. Define immunoelectrophoresis. Write down the applications of immunoelectrophoresis. 2+3=5
10. Differentiate between monoclonal and polyclonal antibodies. What are the applications of monoclonal antibodies? 2+3=5
11. Define hormone. Illustrate the synthesis and application of thyroid hormones. 1+4=5
12. Write short notes on any two (2) of the following: 2.5*2=5
 (i) ELISA (ii) HLA typing (iii) C-peptide (iv) IgG

MS (Biochemistry) July-December Semester Final Examination-2019
Chattogram Veterinary and Animal Sciences University
Faculty of Veterinary Medicine
Department of Physiology, Biochemistry and Pharmacology
Course title: Veterinary Biochemistry
Course Code: VEB-602
Total Marks: 40

Answer any 8 questions and figure in the right margin indicate full marks

- 1 How protein involve in catabolic process? Describe the process for histamine and GABA production? 5
- 2 Enumerate urea cycle in human body? What are the sources of ammonia in to the ammonia pool? List the role of ammonia in metabolic process. 5
- 3 Differentiate between glycolysis and gluconeogenesis? Describe the ETC cycle with its importance in metabolism. 5
- 4 Classify enzyme with example .What happens to the functionality of a denatured enzyme? How can that result be explained with the help of the lock and key model? 5
- 5 Define beta oxidation. Calculate the ATP production from 18 carbon saturated fatty acid? 5
- 6 What are steroids? What are some examples of steroids with a biological function? 5
- 7 What happens to the functionality of a denatured enzyme? How can that result be explained with the help of the lock and key model? Enlist the enzyme in food industry. 5
- 8 What is meant by saturation or unsaturation when referring to oils and fats?. Fats like lard and butter are solid at room temperature. What is it about the structures of their fatty acids that would support this trend? 5
- 9 Classify lipoprotein with their biological importance. 5
- 10 Describe the importance of biologically important peptide in human body. 5

Chattogram Veterinary and Animal Sciences University
MS in Biochemistry July-December Semester Final Examination' 2019
Department of Physiology, Biochemistry and Pharmacology
Course Title: Recombinant DNA Technology
Course Code: RDT-602
Full Marks: 40
Time: 2 hours

Answer any eight (8) of the following questions. Figure in the right margin indicates full marks.

1. a. Define cell cycle. Illustrate the functions of the following phases in pictogram: 1+2=3
(i) G1 (ii) S (iii) G2 (iv) M
- b. Define the following term: (i) Mitosis (ii) Meiosis 2
2. a. What is mutation? Enumerate the different types of mutation. What are the causes of DNA damage? 1+1+1=3
- b. Explain frameshift mutations with its biological significance. 2
3. How do the genetic information exchange by prokaryotes? 5
4. What is mobile genetic element? Enumerate different classes of transposable elements. 2+3=5
5. Illustrate the basic principle of recombinant DNA technology. 5
6. Define vector. Describe a process of cloning using a plasmid vector. 1+4=5
7. Briefly describe a method of plasmid construction. 5
8. Define restriction enzymes. Enumerate the functions of the following enzymes: 1+4=5
(i) *EcoRI* (ii) *BamHI* (iii) *HaeIII* (iv) *HindIII* (v) *NotI*
9. Differentiate between the following pair: (i) Southern blot vs Northern blot 5
10. Briefly describe the basic steps in DNA cloning. 5
11. Write down the applications of DNA cloning. 5
12. Briefly describe genome walking in eukaryotes. 5