

Chattogram Veterinary and Animal Sciences University

DVM 2nd year 1st Semester Final Examination, 2022

Course Title: General Microbiology (Theory)

Course code: GMC-201

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 a question should be answered together.)

SECTION-A

1. Enumerate the branches of bacteriology. Classify bacteria on the basis of morphology and carbon source requirement for growth. 3+4=7
2. What do you mean by bacterial nutrition? With a diagram show the relationship between bacterial nutrients and metabolism. 2+5=7
3. Classify bacteriological media. Briefly discuss the generation time of a bacterium. 4+3=7
4. What do you mean by pure culture of bacteria? Briefly describe the methods of obtaining pure culture of bacteria. 1+6=7
5. What do you mean by genetic recombination occurred in bacteria? What are the types of genetic recombination seen in bacteria? Differentiate point mutation from deletion mutation. 2+2+3=7
6. What would be the states of parasitism in host and when a parasite can be called a pathogen? Write down the external components along with their functions that serve as the first line of defence in a host. 2+5=7
7. Classify fungi based on their morphology and reproduction. With a diagram show and describe the sub-cellular structures of a yeast cell. 3+4=7

SECTION-B

8. Briefly describe the Koch's postulates. Write down the influence of temperature and P^H on the growth of bacteria. 2+5=7
9. Write down the sequential steps of formation of an endospore in bacteria. Why is a bacterial spore so resistant to heat treatment? 4+3=7
10. What do you mean by sterilization, disinfection, aseptic measures and Tyndalization? List the common disinfectants used in the veterinary field along with mode of actions of at least two of them. 2+5=7
11. Describe the characteristics of invasive bacterial pathogens and bacterial endotoxins. 7
12. What are the major pathways by which bacterial pathogens can be transmitted from infected to susceptible animals? 7
13. With a typical diagram describe the structures of a tRNA seen in bacteria and list the functions of its different components. What is a promoter region of a gene? 5+2=7
14. Is there any pathway by which chromosomal DNA can be transferred from a bacterium to another? How drug resistance property acquired in one bacterium can be transferred to another? 3+4=7

Chattogram Veterinary and Animal Sciences University

DVM 2nd year 1st Semester Final Examination-2022

Course Title: General Pathology-I

Course Code: GPT-201

Full Marks: 70, Time: 3 Hours

(Figures in the right margin indicate full marks. Answer five (5) question from each section. Use separate answer script for each section. Fractions of the questions are encouraged to answer together.)

SECTION-A

1. a) Define pathology, general pathology, lesion and biopsy. 2
b) Enumerate the causes of cell injury and death. 2
c) How do endogenous chemical cause cell injury and death? 3
2. a) Describe the possible outcomes of a necrotic tissue. 3
b) List the changes occur after death in an animal body. Explain rigormortis in details. 1+3=4
3. a) What do you mean by pathological calcification. Write down the causes of metastatic calcification. 3
b) Write down the name, its pathogenesis and pathology when urate crystals are deposited in tissues. 4
4. a) Classify pigments. Show the process of formation of bile pigments in a sketch form. 4
b) Write down the etiology and pathogenesis of toxic jaundice. 3
5. a) Define general death. 1
b) Write down the microscopic lesions of i) Black quarter ii) Tiger heart disease iii) TB 3X2=6
6. a) What do you mean by anthracosis. Write down pathology and significance of it. 3
b) How do you differentiate melanoma from melanosis by DOPA test? 2
c) Write down the mechanism of formation of heart failure cell. 2

SECTION-B

7. a) Define and classify atrophy. 1
b) Differentiate between hypertrophy and hyperplasia with examples. 2
c) How do you identify necrotic cells microscopically? 4
8. a) 'Surgical removal of gangrenous part is necessary to preserve patient's life'-why? 3
b) Enlist the postmortem changes that are found in dead animal. 2
c) Enlist 10 developmental anomalies found in animals. 2
9. a) Define infarct and gangrene. 1
b) Describe briefly the lysosomal storage disease. 3
c) Compare and contrast the benign neoplasm from malignant neoplasm. 3
10. a) How does fatty change develop in case of starvation, excessive alcohol consumption and lipotrope deficiency. 3
b) Write down the three pathological conditions where empty spaces are found in the cell cytoplasm. How would you differentiate them. 2
c) Write in short about pompe's disease. 2
11. a) Define photosensitization. Write down the pathogenesis of different types of photosensitization. 4
b) Interpret the various findings of 'Vanden Bergh' reaction. 3
12. a) Define neoplasia. 2
b) Enlist cytologic features of neoplastic cells. 2
c) Define metastasis. How do the neoplastic tissues transport from primary site to another location? 3

Chattogram Veterinary and Animal Sciences University
DVM 2nd year 1st Semester Final Examination-2022
Course Title: Neuroendocrine and Reproductive Physiology
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 number 1 and 5 are compulsory. Use separate answer script for each section. Fractions of the questions are encouraged to be answered together.)

SECTION-A

- | | | | |
|----|----|--|---|
| 1. | a) | Classify Hormone with examples. | 1 |
| | b) | Write the mode of action of peptide hormone. | 2 |
| | c) | How peptide and steroid hormones are different from each other on the basis of mode of action. | 2 |
| 2. | a) | Give the key differences between hormone and enzyme. | 1 |
| | b) | Sketch the pathway of thyroxine hormone synthesis. Explain the statement "Northern part of Bangladesh is more vulnerable to goiter". | 3 |
| | c) | "Castrated male goat can also show libido" is it possible? If yes, explain | 2 |
| 3. | a) | Mention the name and location of the tastebuds in the tongue. | 1 |
| | b) | Moist food is tastier than dry food, explain why? | 3 |
| | c) | Why sweat is not tasted sweet during feverish condition? | 2 |
| 4. | a) | What are the glucose and calcium maintaining hormones? How does they work? | 3 |
| | b) | Define tropic hormones. What are the physiological roles of tropic hormones? Please explain briefly. | 3 |

SECTION-B

- | | | | |
|----|----|---|---|
| 5. | a) | Define reflex arc. How does a reflex arc form? | 2 |
| | b) | Sketch the mechanism of release of neurotransmitter | 2 |
| | c) | Differentiate between sympathetic and parasympathetic system on the basis of function | 2 |
| 6. | a) | Draw a brain and mark different parts of it with one function of each part. | 3 |
| | b) | Give examples of excitatory, inhibitory neurotransmitter | 2 |
| | c) | Draw and label a typical synapse. | 1 |
| 7. | a) | Why pineal gland is called the "Third eye"? What hormone generally released from pineal gland? Enlist the function of that hormone. | 2 |
| | b) | Explain the Renin-Angiotensin-Aldosterone system. | 2 |
| | c) | What are the physiological effects of cortisol in the body? | 2 |
| 8. | a) | Describe the hormonal control of the estrus cycle with a graphical presentation. | 2 |
| | b) | How do different hormones play the role in parturition process? | 2 |
| | c) | Define fertilization. What are the time require for transport of Oocyte through ampullary-isthmic junction in cattle, sheep, and horse? | 2 |

(Figures in the right margin indicate full marks. Answer **three (3)** questions from each section where question number **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 the following terms: 5.0
(i) Nutrition (ii) Nutrients (iii) Roughage
(iv) Concentrate (v) TDN
- b) Classify nutrients with example in each case. 2.0
- c) Indicate the sources of water and mention the factors that affect requirement of water in animals. 4.0

2. a) Define and classify carbohydrate. 3.0
- b) What do you mean by primary and secondary fermentation of carbohydrate? Outline the secondary fermentation of carbohydrate in ruminant. 5.0
- c) Mention the different chambers of cattle stomach with their specific functions. 4.0

3. a) How will you increase food value of rice straw for livestock feeding? 4.0
- b) Enlist the four anti-nutritional factors in animal feed with their properties, sources and health effect. 4.0
- c) State the popular method of urea feeding to animal. 4.0

4. a) Write down the functions and fates of VFA in ruminant. 3.0
- b) Indicate the pathways of propionate metabolism in ruminants and estimate how much energy produced from one mole propionate. 5.0
- c) Illustrate the partitioning of energy in ruminants. 4.0

SECTION-B

5. a) Define lipid and fatty acid. Classify fatty acid with examples. 3.0
- b) What type of lipid present in ruminant's diet? Discuss in brief lipid digestion procedure in ruminants. 4.0
- c) How fat is synthesized in the animal body? 4.0

6. a) Define true and apparent digestibility. 2.0
- b) Write in brief, how you will estimate digestibility of Napier grass in direct or in vivo method. 5.0
- c) A cattle was supplied 10kg maize (DM- 35%) and it refused 1.5 kg maize as leftover, calculate the digestibility of Maize (DM basis) considering 12kg of voided faeces (faeces DM-25%). 5.0

7. a) Define vitamin. Indicate which vitamins are responsible for reproduction and vision, mention the source of such vitamin in ruminants and poultry. 4.0
- b) Write down the functions and deficiency symptoms of Ca, Vit E and Vit B₂. 4.0
- c) Mention the inter relationship between vitamins and minerals. 4.0

8. Write short notes on (any four): 4x3=12
 - a) Feeding standard
 - b) Starch digestion in poultry
 - c) Vitamin B involved in energy transformation
 - d) Biological value
 - e) Nutritive value of Bone meal, Molasses, Soybean meal and Rubber seed

Chattogram Veterinary and Animal Sciences University
DVM 2nd year 1st Semester Final Examination-2022
Course Title: Animal Genetics (Theory)
Course Code: AGN-201
Full Marks: 70, Time: 3 Hours

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

SECTION-A

- | | | |
|----|---|-----|
| 1. | a) Explain phenotype, phenocopy, pleiotropy and heterozygote with example(s). | 4.0 |
| | b) Differentiate eukaryotic genes from prokaryotic genes. | 3.0 |
| | c) What are the factors should be considered for selecting genetic materials? | 4.0 |
| 2. | a) Differentiate dominance from incomplete dominance. | 3.0 |
| | b) Explain with an example how classical 9:3:3:1 ratio may be converted into 12:3:1 | 4.0 |
| | c) Explain with an example of non-epistatic intergenic interaction. | 5.0 |
| 3. | a) Briefly explain sex limited and sex influence traits with example in the case of animal. | 4.0 |
| | b) Describe the genetic balance mechanism of sex determination in drosophila. | 4.0 |
| | c) Explain the multiple allelic inheritance in ABO blood grouping system. | 4.0 |
| 4. | a) What do you mean by genetic code and codon? | 2.0 |
| | b) How will you prove DNA act as a genetic material? | 3.0 |
| | c) State the roles of proteins and enzymes in DNA replication. | 4.0 |
| | d) Illustrate the characteristics of genetic materials. Explain the "Chargaff's rules" | 3.0 |

SECTION-B

- | | | |
|-----|--|--------|
| 5. | a) How independent assortment differ from linkage. | 3.0 |
| | b) Briefly explain the term penetrance and expressivity. | 3.0 |
| | c) Explain co-dominant gene action with example. | 5.0 |
| 6. | a) What is central dogma? Explain in details about RNA splicing. | 4.0 |
| | b) Explain lethal gene action in poultry. | 3.0 |
| | c) List the important genetic diseases and disorders of cattle. What are the strategies you should follow for controlling of these problems? | 5.0 |
| 7. | a) What do you mean by chromosomal aberration? | 2.0 |
| | b) Explain the term euploidy and aneuploids. | 4.0 |
| | c) State the recombination. Describe genetic recombination in bacteria through conjugation. | 6.0 |
| 12. | Write short notes any 4 (four) to the followings: | 3×4=12 |
| | a) Non-disjunction | |
| | b) Translocation and inversion | |
| | c) Linkage and crossing over | |
| | d) Genetic map and map distance | |
| | e) Post-transcription modification | |

DVM 2nd year 1st Semester Final Examination-2022
Course Title: Platyhelminthes and Malacology
Course Code: PLM-201, Full Marks: 70, Time: 3 Hours

(Figures in the right margin indicate full marks. Answer five (5) question from each section. Use separate answer script for each section. Fractions of the questions are encouraged to answer together.)

SECTION-A

1. a) Define helminth. Briefly describe the developmental stages of a typical digenetic trematode. 4
- b) What is immunity and resistant? Write down the factors responsible for breakdown of immunity. 3
2. a) Describe the life cycle, pathogenic significance and control measures of *Echinococcus granulosus* infection in both final and intermediate hosts. 5
- b) "The densities and distribution of parasites are largely depend on the climatic condition and availability of the intermediate hosts"-justify the statement. 2
3. a) What is metacestode? Write down the name of different types of metacestodes with appropriate examples in each case. 4
- b) Differentiate between 'Psudophyllidea' and 'cyclophyllidea' 3
4. a) Define 'Malacology'. Enlist the names of the fresh water snails which acts as intermediate hosts of trematodes of veterinary importance. 3
- b) Mention the general morphological features of a snail. 2
- c) Describe the biological and chemical control of snail infestation in a pasture land. 2
5. a) Write down the name of the body parts of an adult cestode. Briefly describe the morphology of a mature proglottid of a cestode. 4
- b) How does the *Schistosoma* species differ morphologically from other trematodes? 3
6. Write short notes on any two (2) of the following:
 - i) Swimmer's itch ii) Bottle jaw iii) Inverse age resistance v) Coenurosis

SECTION-B

7. a) Illustrate the general injurious effects of parasitism on their hosts. 4
- b) Briefly describe the various routes and sources of parasitic infections with example in each case. 3
8. a) Enlist the trematodes and cestodes of poultry. 3
- b) Briefly describe the life cycle, pathogenic significance and control measures of *Echinostoma revolutum* in duck. 4
9. a) Mention the genera, cercariae and infective stages of the members of the following family: 1X4=4
 - i) Schistosomatidae ii) Fasciolidae iii) Parasmphistomatidae
 - iv) Dicrocoeliidae
- b) Write down the scientific name of the following parasites. 0.5X6=3
 - i) Liver fluke (deer) ii) Lancet fluke iii) Blood fluke (cow)
 - iv) Cat liver fluke v) Lung fluke (dog) vi) Chinese liver fluke
10. a) What are the striking differences in the life cycle of 'liver fluke' and 'blood fluke'? 4
- b) Describe the morphological features of the different genera of the family 'Fasciolidae' 3
11. a) Differentiate any two (2) of the following: 2X2=4
 - i) Transport host and paratenic host
 - ii) Symbiosis and mutualism
 - iii) Temporary parasite and periodic parasite
- b) How will you differentiate the morphological features of '*Taenia saginata*' from '*Moniezia expansa*' 3
12. a) What is anthelmintic? Write down the characteristics of an ideal anthelmintic. 3
- b) How will you confirm the following diseases in the laboratory (any two): 2X2=4
 - i) Snoring disease ii) Monieziosis iii) *Prosthogonimus ovatus* infection

Chattogram Veterinary and Animal Sciences University

DVM 2nd year 1st Semester Final Examination, 2022

Course Title: Environmental Hygiene and Biosecurity (Theory)

Course code: EHB-201

Full Marks: 35, Time: 2 Hours

(Figures in the right margin indicate full marks. Answer Three (3) questions from each section taking Question No. 5 as compulsory. Use separate answer script for each section. Fractions of a question should be answered together.)

SECTION – A

- | | | |
|-------|---|---|
| 1 (a) | Define health. What are the tasks of Animal Hygiene? | 4 |
| (b) | Briefly describe the auto-purification process of soil. | 2 |
| 2 (a) | List different types of ventilation. Briefly describe mechanical ventilation. | 3 |
| (b) | State the properties of hygienically pure water. | 3 |
| 3 (a) | What are the precautions to be undertaken during the transportation of carcasses? | 3 |
| (b) | State the principle of waste disposal. | 3 |
| 4 (a) | Define quarantine. What are the steps you will take to prevent the entry of exotic animal diseases? | 3 |
| (b) | Suppose a large layer farm is infected with the Newcastle disease virus (NDV). How will you disinfect the layer shed through gaseous chemicals? | 2 |
| (c) | List four (4) disinfectants used for farm environments. | 1 |

SECTION – B

- | | | |
|-------|--|-------|
| 5 (a) | Briefly describe the activated sludge treatment process for complex organic animal wastes. | 3 |
| (b) | What adverse consequences will you observe during the long transmission of animals? How will you manage the transportation stress? | 2 |
| 6 (a) | Mention different soil layers for ground water. Describe the water-bearing stratum that is considered a wholesome water source. | 3 |
| (b) | Define methanogenesis. Write down the source and process of methane gas formation. | 3 |
| 7 (a) | Justify the statement, "Soil topology has great influences upon the animal's health". | 3 |
| (b) | List different types of biosecurity. Briefly describe the biosecurity that is regularly monitored for disease free health. | 3 |
| 8 (a) | What are the putative channels responsible for the entry of infectious diseases into different farms. | 2 |
| (b) | Write down the following short notes:
i.) Impact of acid rain on livestock
ii) Impurities of air | 2+2=4 |

DVM 2nd year 1st Semester Final Examination-2022
Course Title: Zoo, Wild & Lab Animal Management (Theory)
Course Code: ZAM-201
Full Marks: 35, Time: 2 Hours

(Figures in the right margin indicate full marks. Answer three (3) questions from each section where question number 1 is compulsory. Use separate answer script for each section. Fractions of the question must be answered together.)

SECTION-A

1. Differentiate the following terms (any five) 5x1=5
 - a) Custodial and Manipulative Management
 - b) Taming and Domestication
 - c) Sanctuary and Biosphere Reserve
 - d) Flora and Fauna
 - e) Rainforest and Mangrove Forest
 - f) Apes and Monkey

2. a) Categorize the wild animals on the basis of habitat and food habits. 3.0
b) What do you mean by ecological succession? Briefly discuss the intra and inter specific relationship of biotic components of environment. 3.0

3. a) Write down the breeding and reproductive behavior of the following animals (any three): 3.0
 - i) Royal Bengal Tiger
 - ii) Lion
 - iii) Asiatic black bear
 - iv) Elephant
b) Write a detail account on various threats associated with wildlife destruction. 3.0

4. a) What types of barriers should be constructed in an enclosure of a tiger? Write down the principles of feeding and enclosure design of a traditional Zoo. 3.0
b) Why dietary protein requirement is higher in hindgut fermenters compared to foregut fermenters? Discuss the causes and deficiency symptoms of Vitamin A, D and E in Zoo animals. 3.0

SECTION-B

5. a) Differentiate wild animal 'emigration' from 'migration' in a tabular form. Discuss different types of Vegetal covers of wildlife habitat. 3.0
b) Briefly discuss the causes of extinction of a species. Write down the mission and activities of IUCN, WWF, GIF and WAZA. 3.0

6. a) Provide a concise overview of the general ethical guidelines for using lab animals in research. What do you mean by 'Knockout mice' and Immuno-compromised mouse? 3.0
b) Briefly discuss the standard operation procedure of laboratory mouse in a laboratory animal house. 3.0

7. a) What do you mean by endangered species? List the extinct vertebrates of Bangladesh. 3.0
b) Briefly discuss the steps of captive breeding of an endangered species. 3.0

8. a) Write down the taxonomy of rabbit, guineapig, hippopotamus and Zebra. Why guineapig and primates are required to supply additional vitamin C in their diet? 3.0
b) Write short notes on: 3.0
 - i) Specific pathogen free animal
 - ii) Stereotypic behaviors
 - iii) Flagship species of wildlife habitat