

Chittagong Veterinary and Animal Sciences University
MS in Microbiology Final Examination
January-June Semester, 2015
Course Title: Mycology and Microbiology of Atypical Bacteria
Course Code: MMA 601
Total Marks: 40 Time: 2 hours

Figures in the right margin indicate full marks. Answer any four questions.

1. a) Classify chlamydiae on the basis of genetic relatedness. What is the difference between an elementary body and a reticulate body of *Chlamydia*? 4
- b) State the principal characteristics of the organisms in the order *Rickettsiales*. Write down the possible consequences of infection with *Ehrlichia canis*. 6
2. a) How can the cell structure of mycoplasmas account for their pleomorphism? Enumerate species of *Mycoplasma* with diseases they could cause to cattle, sheep, goat and poultry. 5
- b) Describe the laboratory procedures employed for the diagnosis of mycoplasmas from clinical specimens. 5
3. a) What are the factors that predispose to fungal infections? Illustrate the modes and sites of action of different classes of antifungal drugs. 5
- b) Write down the characteristics of mycotoxins and principal features of mycotoxicoses. Which fungal species is responsible for causing ergotism in animals? How does ergot toxin work? 5
4. a) Describe the microscopic aspects of different types of asexual spores. 4
- b) List the zoophilic and geophilic dermatophytes of veterinary importance. Describe the laboratory diagnostic procedures of dermatophytes affecting cattle and dogs. 6
5. a) How will you differentiate between *Aspergillus fumigatus* and *Aspergillus niger* based on the shape of the vesicles and conidial arrangement? Write down the key features of *Malassezia pachydermatis*. 4
- b) List the genera of zygomycetes which include species of veterinary importance. How will you isolate and identify *Cryptococcus neoformans* from clinical specimens? 6

Chittagong Veterinary and Animal Sciences University

MS in Microbiology Final Examination

January-June Semester 2015

Course title: Advanced General Virology

Course code: AGV-601

Full marks-40, time – 2 hours

Answer and four questions; figures in the right margin indicate full marks

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|---|--|----|
| 1 | a) Interpret the term virus by different scientists | 5 |
| | b) Disclose the horizon of virological science | 5 |
| 2 | a) Indicate the genesis of virus | 5 |
| | b) State the frame work of virus | 5 |
| 3 | a) Illustrate the virus purification process | 10 |
| 4 | a) Explain the viral apoptosis process | 5 |
| | b) Mention the roles of innate immunity in viral disease | 5 |
| 5 | a) State the modern classification of virus | 3 |
| | b) Express the insight of transcription process of ds DNA, -sense ss RNA and retro virus | 7 |

Chittagong Veterinary and Animal Sciences University

MS in Microbiology Final Examination

January-June Semester 2015

Course title: Industrial Microbiology

Course code: IMB-601

Full marks-40, time – 2 hours

Answer and four questions; figures in the right margin indicate full marks

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|---|--|---|
| 1 | a) Disclose the purview of industrial microbiology. | 5 |
| | b) Mention screening process in an industrial product. | 5 |
| 2 | a) Differentiate biosafety cabinet III from IV. | 5 |
| | b) Discuss the production of wine and yoghurt. | 5 |
| 3 | a) What are the different types of centrifuge machines are used in microbial industry? | 2 |
| | b) Discuss any two of them with figure. | 8 |
| 4 | a) Describe an ideal fermenter with neat diagram. | 7 |
| | b) Differentiate different fermenters. | 3 |
| 5 | a) Discuss the uses of protease and lipase enzyme in the industry. | 6 |
| | b) Mention the application of butanol and ethanol. | 4 |

Chittagong Veterinary and Animal Sciences University

MS in Microbiology Final Examination

January – June Semester 2015

Course title: **Food Microbiology**

Course Code: FMB-601

Full Marks- 40, Time- 2 Hours

Answer any **four** questions; Figures in the right margin indicate full marks

1. a) Write down the physical and chemical symptoms of rotten fish. 2.5
b) Describe off odor and off taste of meat under aerobic condition. 2.5
c) What are the most common types of spoilage in fruits and vegetables? 5

- 2 a) Enlist the food borne bacterial disease with their causal agent, incubation period, duration of illness and food involved. 5
b) Describe the growth, pathogenicity, toxin production mechanism and conditions necessary for outbreak of Botulism. 5

3. a) Define food borne disease outbreak and classify it according to incubation period. 2.5
b) Differentiate between food borne infection and intoxication 2.5
c) Discuss briefly the steps of food borne disease outbreak investigation. 5

4. a) Which factors affect the heat resistance of microorganisms? 2.5
b) Write down the causes of spoilage in heated canned food & give a short description of biological cause of spoilage. 5
c) Enlist five chemical preservatives with maximum tolerance, organism affected and their uses. 2.5

5. Write short note on any four - 2.5×4
i) HACCP =10
ii) Color change in milk
iii) Wine
iv) Microbial Enzymes
v) Single cell protein(SCP)

Chittagong Veterinary and Animal Sciences University

MS in Microbiology Final Examination

January – June Semester, 2015

Course title: Advanced General Bacteriology

Course Code: AGB-601

Full Marks: 40; Time: 2 hours

Answer any 4 (FOUR) questions

1. Give a brief description on halophiles, methanogens and thermoacidophiles. What are the toxins produced by Cyanobacteria? Where peptidoglycan, lipopolysaccharides and bactoprenol are found in bacterial cells and what do they perform in bacteria? 10
2. What do you mean by essential and non-essential nutrients for bacteria? Describe briefly the mechanisms involved in the transportation of nutrients to bacterial cells from their outer environment. Write down some common characteristics of bacterial fermentation. 10
3. Describe the significance of hexose monophosphate pathway (HMP) of metabolism occurred in bacteria. How many molecules of reduced hydrogen carriers and ATP are produced in HMP coupled with TCA cycle? Name some terminal electron acceptors used in bacterial metabolism, and their corresponding reduced products. 10
4. How DNA is synthesized in a bacterial cell? Write down the functions of different loops and the acceptor stem of tRNA in bacteria? With example enumerate the genes that constitute an operon. 10
5. Describe the steps through which natural transformation occurred in bacteria. What is random generalized transduction? What are the major mechanisms responsible for emerging antimicrobial resistance in bacteria? 10

MS in Epidemiology

Dept of Medicine and Surgery, CVASU

Semester Final Examination: January-June/2015

Sub: Population Health (POH-601)

Full Marks: 40

Time: 2 Hours

Figures in the right margin indicate full marks. Answer any four questions. 4 x 10=40

1. What is datum? How do you generate a date bank in a dairy farm? Write a sample questionnaire for generation of retrospective data from a dairy farm.
2. What is herd health? Is it a holostic approach? Write-down the name of record keeping registers in a modern dairy farming. How dairy animals are identified?
3. What is program visit? How do you differentiate farm visit from farm monitoring? Explained their merit for economic benefit.
4. What do you mean by production diseases of ruminants? Mention common 5(five) production diseases of ruminants. How do you prevent them in dairy farms?
5. What is udder health? How do you prevent "Mastitis" in a dairy farm? Mention the common name of antibiotic apply in mastitis treatment. Cite the withdrawal period for use of milk for human consumption.
6. Short notes: (any one)
 - a) Write a monitoring report of dairy farm
 - b) Application of HACCP in milk production of a large dairy farm.

Chittagong Veterinary and Animal Sciences University
January to June Semester MS Final Examination, 2015
Department of Medicine and Surgery
MS in Epidemiology
Course Title: Animal Health Economics (Theory)
Course Title: AHE-601

Full Marks: 40

Time: 2 hours

Answer any four (04) questions from the followings:

1. a) Define animal health economics. Compare and contrast between i) Production possibility curve and iso-quant ii) Iso-cost and iso-revenue curve. 3.0
 b) Briefly discuss the graphical approach in equilibrium for revenue maximizing combination of products of a firm. 7.0
2. a) Distinguish between input and output. Discuss the rules and methods used for calculating Livestock output in economic analysis. 7.0
 b) A layer farm owner started a layer farm by purchasing 500 matured pullets from a hatchery farm. On average 52 weeks recorded as laying period, 10 % of laying birds died and not replaced during laying period, average egg production per bird recorded as 22 dozens, sold @ Tk. 110 per dozen. At the end of the laying period, remaining hens are culled and sold @ Tk. 250 per hen. **Calculate** annual enterprise output per hen? 3.0
3. a) Write the commonly used tools of farm business analysis. Graphically discuss the Break-even analysis. 7.0
 b) A Dairy entrepreneur wishes to establish a dairy enterprise keeping 10 Cross-bred milch cows for 5 years period. Each year the farm owner replaces at least 10 % oldest cow of total herd with an in-calf heifer valued at \$ 500. Assumes, each cow yearly produces 1 calf valued at \$ 100, milk produced 1750 liters valued at \$ 0.75 per liter, culled 1 cow being sold at \$ 250. The per cow annual costs of this enterprise for variable factors are recorded as: concentrate feeds valued at \$ 350, insurance \$ 50, green grasses & paddy straw \$ 150, medicine treatment cost valued \$ 35, casual labour and miscellaneous cost \$72. **Calculate- Gross margin per cow.** 3.0
4. a) Define prevention and control of animal diseases. Write the probable costs/losses of animal diseases in a farm production system. 5.0
 b) List down the prevention and outbreak costs of animal diseases with mentioning affected holders in context of Bangladesh. 5.0
5. a) Distinguish between compounding and discounting. Briefly discuss the methods for economic analysis as an aid to decision making in the field of Animal health. 7.0
 b) Five(05) years duration a disease control programme to be undertaken for the development livestock production in a particular area in Bangladesh. The intended costs and benefits in million tk. are as follows:

<u>Year</u>	<u>Costs</u>	<u>Benefits</u>
1	950	0
2	450	150
3	500	650
4	350	750
5	250	1350

Calculate: i. BCR and ii. NPV by estimating rate of discount at 12 percent. 3.0

Chittagong Veterinary and Animal Sciences University
Faculty of Veterinary Medicine
MS January-June Semester Final Examination 2015
MS in Epidemiology
Course title: Risk Analysis and Policy Planning
Course code: RAP-601
Full marks: 40, Time: 2 hours

(Figures in the right margin indicate full marks. Answer any 5 questions from the following)

1. a. What are the three main risk analysis concepts at international level? Describe any of them in brief. 4
b. What is risk analysis? 2
c. Enumerate the applications of risk analysis in veterinary medicine. 2
2. a. Define qualitative and quantitative risk analysis. 2
b. Differentiate qualitative risk analysis from quantitative risk analysis. 3
c. What are the advantages and disadvantages of qualitative and quantitative risk analysis? 3
3. a. What is hazard? 1
b. Describe two of the main components of risk analysis - hazard identification and risk management in brief. 7
4. a. What are the components of risk assessment? Give a brief description of each component. 4
b. What are the major factors that might influence the occurrence of each stage of risk assessment? 4
5. a. What do you mean by contingency plan in relation to disease control? 2
b. Write down the format of a standard contingency plan for an emerging contagious disease. 6
6. a. What is risk communication? Describe how risk communication is done. 4
b. What is risk period? Describe the risk periods in brief. 4

Chittagong Veterinary and Animal Sciences University

MS in Epidemiology Final Examination

January-June Semester 2015

Course title: GIS and Molecular Technique in Epidemiology

Course code: GMT-601

Full marks-40, time – 2 hours

Answer any four questions; figures in the right margin indicate full marks

- 1 a) What do you mean by DNA sequencing? 2
b) Explain Maxam and Gilbert method of DNA sequencing 4
c) Discuss PCR. 4
- 2 a) What is blot in molecular biology? 2
b) Explain any blotting technology in the field of molecular biology. 6
c) Elucidate Shine-Delgarno sequence. 2
- 3 a) Explain how insertional inactivation helps to find out the right clone in plasmid vector. 6
b) What do you mean by transgenic? Illustrate any two of the process of transgenic. 4
- 4 a) Why spatio-temporal analysis is necessary in disease outbreak investigation? 3
b) Define first order and second order spatial variation with examples. 2
c) What do you mean by disease clusters? What are the methods to identify disease clusters? Briefly describe a method to identify global clusters. 5
- 5 a) What is edge effect? 2
b) Why it is necessary to visualize spatial data? What are the methods of visualization? 3
c) How you can account the effect of spatial dependence of data in statistical models? 3
d) What do you mean by vector and raster format of data? 2

Chittagong Veterinary and Animal Sciences University
Faculty of Veterinary Medicine
Department of Medicine and Surgery (DMS)
January-June Semester Final Examination 2015
Sub: Veterinary Dermatology; Course Code: VED-601
Full Marks: 40; Time 2 hours
Answer any four (4) from the following questions

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|---|---|--|---|
| 1 | a | Describe Clinical findings of dermatitis and dermatosis in domestic/ farm animals | 7 |
| | | How will you manage these problems | 3 |
| 2 | a | Enumerate congenital defects of skin | 3 |
| | b | Describe Etiology, pathogenesis, clinical findings and treatment of Anasarca | 4 |
| | c | Write notes on hepatogenous photosensitization | 3 |
| 3 | a | Describe the procedure of producing autogenous vaccine in papillomatosis in cattle | 4 |
| | b | Discuss the clinical signs, diagnosis and treatment of cutaneous habronemiasis in horses | 6 |
| 4 | a | Discuss cutaneous manifestations and diagnosis of canine hypothyroidism | 6 |
| | b | Write down the clinical presentations and treatment of canine hyperadrenocorticism. | 4 |
| 5 | a | Discuss canine deep pyoderma with emphasis on its management. | 5 |
| | b | How will you treat defects in cornification of canine skin. | 5 |

Good Luck

MS in Medicine

Dept of Medicine and Surgery, CVASU

Semester Final Examination: January-June/2015

Sub: Food Animal Medicine (FAM-601)

Full Marks: 40

Time: 2 Hours

Figures in the right margin indicate full marks. Answer any four questions. 4 x 10=40

1. a) Write down the name of diseases of ruminant caused by clostridial bacteria.
b) Briefly describe the common clinical findings produced by blackleg and anthrax. Provide the line of treatment.
2. a) Write down the name of 5(five) bacterial diseases that produced endo-toxin, causing toxemia in food animals.
b) Write down the clinical findings and line of treatment of H.S in Buffalo in costal areas of Chittagong.
3. a) Write down the name of common viral diseases of animal that affect the skin.
b) Briefly describe the clinical findings of F.M.D, ephemeral fever of cattle. Provide the line of treatment.
4. a) Mention the name of rickettsial diseases of bovine with etiology.
b) Briefly describe the clinical findings, diagnosis and treatment of piroplasmiasis of cattle.
5. a) Define encephalitis. Mention the name of three diseases with etiology that causes encephalitis.
b) Briefly describe the clinical findings, diagnosis and treatment of Listeriosis of sheep.
6. Write down the prescription of the following:
 - a) Bovine schistosomiasis
 - b) Papillomatosis
 - c) Viral diarrhoea
 - d) Tetanus
 - e) Leptospirosis