

Chittagong Veterinary and Animal Sciences University
MS in Microbiology Final Examination
January-June Semester, 2016
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) Enumerate the dermatophytes of animals and their main hosts. Give morphological features of the macroconidia of *Microsporum canis*, *Microsporum gypseum* and *Trichophyton mentagrophytes*. 4
- b) Describe different types of vegetative hyphae with specific appearance produced by fungi. Write down the general methods employed for the direct microscopic examination of fungi. Enumerate the factors predisposing to fungal invasion. 6
2. a) Write down the key features of *Candida albicans*, *Cryptococcus neoformans*, *Aspergillus fumigatus* and *Mortierella wolfii*. 6
- b) List the rickettsial pathogens of veterinary significance. Illustrate the laboratory diagnostic procedure of Q fever. 4
3. a) State the principal characteristics of the organisms in the order *Chlamydiales*. Describe the stages in the development of chlamydial forms in host cells. 6
- b) Write down the toxins of cyanobacteria, their modes of action and clinical effects. 4
4. a) How will you differentiate between mycoplasmal and bacterial L-form microcolonies? Briefly describe the virulence attributes of pathogenic *Mycoplasma* species. 6
- b) Mention the families and genera of veterinary interest in the class Mollicutes, members of which may be isolated from clinical specimens. How will you differentiate between the three mycoplasmal genera of veterinary importance? 4
5. a) State the microscopic morphology of dimorphic fungi in animal tissue and in cultures. 4
- b) Write down the biological effects of aflatoxin. List the classical and emerging methods used for mycotoxin analyses. 6

Chittagong Veterinary and Animal Sciences University

MS in Microbiology Final Examination

January-June Semester 2016

Course title: Advanced General Virology

Course code: AGV-601

Full marks-40, time- 2 hours

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

1	How do you feel about the significance of virology subject?	10
2	What are the different steps of viral replication? Explain the salient feature of transcription and translation in different groups of virus.	10
3	How does the antiviral drug inhibit viral replication process?	10
4	Compose response of immune system against viral disease	10
5	Evaluate the mechanism of interferon in blocking viral replication process.	10

Chittagong Veterinary and Animal Sciences University

MS in Microbiology Final Examination

January-June Semester 2016

Course title: Industrial Microbiology

Course code: IMB-601

Full marks-40, time- 2 hours

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

1	You are appointed as an industrial microbiologist in a private enterprise. The company is interested to explore the possibility of antimicrobial substances from a soil bacterium. Now How can you proceed on media requirement for a new bacterium ?	10
2	Review on application of pectinase in the industrial sector	10
3	How will you screen for a novel compound from a huge microbial source of population ?	10
4	What are the different biofermentors used in microbial industry? Explain a typical biofermentor which is used very common.	10
5	What do you mean by containment? Contrast between BSC III and BSC IV from operation aspect.	10

Chittagong Veterinary and Animal Sciences University

MS in Microbiology Final Examination

January – June Semester, 2016

Course title: Advanced General Bacteriology

Course Code: AGB-601

Full Marks: 40; Time: 2 hours

Answer any 4 (FOUR) questions.

1. What do you mean by synchronous and non-synchronous growth of bacteria in liquid media? Characterize the growth of bacteria in solid media. Describe the influences of moisture, pH and oxygen on the growth of bacteria. 10
2. Describe the chemical components of Gram negative bacterial cell wall and bacterial spore. Fermentation or respiratory catabolism – which one is more energy producing for bacteria? Justify your opinion. How is proton motive force produced in bacteria? 10
3. If nitrate sulfate and carbon dioxide are used as terminal electron acceptors in bacterial metabolism, what would be the end products? How mRNA is synthesized in bacteria? Give the features of generalized transduction. 10
4. Describe the mechanism of efflux pump associated with antimicrobial resistance in bacteria. Write down the methods that can be used to measure minimum inhibitory concentration of an antimicrobial against a test organism? List the consequences of point and deletion mutations in bacteria. 10
5. What are the transposable genetic elements seen in bacteria? Mention basic properties of type II restriction enzymes. With illustrations enumerate basic steps of cloning of a foreign gene in a bacterial vector. 10

Chittagong Veterinary and Animal Sciences University

MS in Microbiology Final Examination

January – June Semester, 2016

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) With reference to their role as agents of food-borne disease write short notes on any two of the following: i) *Clostridium perfringens* ii) *Bacillus cereus* iii) *Escherichia Coli* 2.5×2=5
- b) “Food-borne intoxications can be caused either by bacteria or fungi.” Discuss this statement with reference to one bacterial agent and one fungal agent. 5
2. a) Define Good manufacturing practice (GMP). What should be the criteria for bacteriological standard of water? 5
- b) Write down the principles of developing and operating a HACCP program. Differentiate between CCP1 and CCP2. 5
3. a) Write down the name of the organisms responsible for the following conditions (any ten)- 5
- i) Bacterial surface ropiness of milk ii) Fishy flavor of milk iii) White spot on meat iv) Acid and gas formation in meat v) Fungal pink spots on egg vi) Cabbage watery flavor of egg vii) Ropiness of cereals viii) Blue mold rot of fruit or vegetable ix) Spoilage of Honey x) Spoilage of fish in chilling temperature xi) Bacterial Black rots in egg xii) Whiskers in meat. 5
- b) Which factors influencing kind and rate of spoilage in fish? Write down the chemical changes of rotten fish.
4. a) Discuss briefly the steps of food borne disease outbreak investigation. 5
- b) Write down the principles of food preservation and enlist commonly used methods of food preservation. 5
5. Write short note on any four - 2.5×4=10
- I. Color change of spoiled milk
 - II. Fungal spoilage of egg
 - III. Defects of can
 - IV. Malt Beverage
 - V. Microbial enzymes

Chittagong Veterinary and Animal Sciences University
Faculty of Veterinary Medicine
Department of Medicine and Surgery
M. S. in Surgery, Semester: January-June, 2016
Subject: Large Animal Anaesthesiology
Course Code: LAA 601; Credit: 2
Total Marks: 40
Time: 2 (Two) Hours

(Figures in the right margin indicate full marks. Answer any **FOUR** questions of the followings)

1. What are the preparations necessary before anaesthesia in case of large animals and why? 10.0
Mention the functions of different parts of inhalation anaesthetic machine.
2. Write down in brief with indications and techniques of the different nerve block and regional anaesthesia of a cow. 10.0
3. Write down the common local anaesthetics, sedatives and general anaesthetics used in large animals with their dose, onset of action, anaesthetic duration and their effects on different systems. 10.0
4. Write down the advantages and disadvantages of inhalation anaesthesia. Describe the different kinds of inhalation anaesthetics and breathing circuits. 10.0
5. a) Mention the possible postanaesthetic complications in large animals of general anaesthesia. Write down the prevention and treatment of such complications? Write down the ventilation techniques in large animals. 10.0
6. Write down in brief the anaesthetic procedure of following conditions- gid disease in a goat, umbilical hernia in a calf, penis amputation in a bull, enucleation of eyeball in a cow, dystocia in a goat, limb amputation in a calf, colic operation in a horse, udder amputation in a goat, rumenotomy in cow, dermoid cyst operation in calf. 10.0

M.S. in Surgery; January-June Semester-2016
Subject: Zoo, Wild and Lab. Animal Anaesthesia
Course code: ZWL 601

Total Marks: 40 **Time: 2 (two) hours**

Department of Medicine and Surgery
Faculty of Veterinary Medicine
CHITTAGONG VETERINARY AND ANIMAL SCIENCES UNIVERSITY

(Figures in the right margin indicate full marks. Answer any FOUR questions)

1. (a) Mention the classification of anaesthesia in animals. 03
(b) What should be monitored for respiratory and cardiovascular systems during general anaesthesia in animals? 04
(c) Briefly mention the maintenance of airway during anaesthesia for zoo, wild and laboratory animal practices? 03
2. (a) When is fluid therapy indicated in animals? 02
(b) What pre-existing disease processes or conditions typically associated with electrolyte abnormalities in zoo, wild and lab animals? 05
(c) What fluids should be administered to patients with sodium abnormalities and how fast can be administered in primates of wild animals? 03
3. (a) What are the principles of pain management in animals? 03
(b) Write down the capture and restraint techniques for different species of birds? 04
(c) Write down the objectives of CPR in wild animals. Mention about the six steps of CPR adapted from the human resuscitation council guidelines. 03
4. (a) Mention about the precapture considerations for wild and laboratory animals? 04
(b) Mention the types of dart used in zoo. 03
(c) Write down about the mechanism of drug delivery in blow darts? 03
5. (a) What are the equipment and methods used for restraint the venomous snake? 04
(b) Write about the venipuncture and intravenous catheterization for turtles? 03
(c) Mention the name and dosage of three recommended drugs for immobilization of monkey and gibbon in a zoo? 03
6. Write short notes on *any two* of the followings:- 2x5=10
 - a) Capture myopathy.
 - b) Anatomical and physiological considerations during Bird anaesthesia.
 - c) Premedicative agents for rodents.
 - d) Capture of displaced Sumatran Rhinoceroses.

Chittagong Veterinary and Animal Sciences University
Department of Medicine and Surgery
MS in Epidemiology
January-June Semester Final Examination 2016
Course title: Research Methodology
Course code: REM-601
Full marks: 40, Time: 2 hours

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

1. a. Enlist the 'measures of frequency' and 'measures of association' that can be estimated in different study designs. Explain why we cannot measure all different kinds of measures in all study designs. 6
- a. Write down 2 differences between descriptive study designs and analytical study designs. 2
2. a. Write down the differences between 'strata' and 'cluster'. 2
- b. Surgeons perform a new surgical procedure on 10 patients and report their outcomes. What kind of study is this? Justify your answer. 3
- c. What do you mean by 'loss to follow-up'? In which study design(s) we might encounter this problem? 3
3. a. List the characteristics of experimental study designs. 2
- b. Construct an experimental study design to measure the vaccine efficacy of a newly introduced vaccine against PPR in goats. 6
4. a. Suppose you have a study population of 4000 dairy cows and your estimated sample size is 250 cows. Describe the procedure of selecting the cows using systematic random sampling. 4
- b. What is sampling error? Describe with an example. 4
5. a. What are the basic differences between nested case-control study and case-cohort study design? 4
- b. In case-crossover study design, selection bias is minimized and time invariant host related confounder variables are controlled. Explain how? 4
6. a. Case-control study design is subjected to selection bias and recall bias. What measures you should take to minimize these biases? 4
- b. 'To study rare exposures, case-control study design is not suitable' – justify this statement. 2
- c. Explain 'blinding' in context of randomized controlled trial. 2

Chittagong Veterinary and Animal Sciences University
Faculty of Veterinary Medicine
Department of Medicine and Surgery
MS in Medicine
Semester: January-June 2016
Subject- Avian Medicine
Course code: AVM-601
Total marks – 40
Time – 2 (Two) hours

(Figures in the right margin indicate full marks. Answer any **FOUR** questions)

1. (a) What is biosecurity? Describe the factors influencing biosecurity in poultry farm. **08**
(b) Name six vertically transmitted diseases in poultry. **02**
2. Write down the etiology, clinical signs, postmortem lesions, treatment, prevention and control of Gumboro disease. **10**
3. (a) How can you differentiate between Marek's disease and Avian Leukosis. **05**
(b) Write short notes on Bumble foot disease and Pullorum disease. **05**
4. Write down the etiology, clinical signs, postmortem lesions, treatment, prevention and control of Duck plague. **10**
5. (a) Which subtypes of Avian influenza are highly pathogenic for chickens? **01**
(b) Write down the clinical signs, postmortem lesions, treatment, prevention and control of Avian influenza. **09**
6. Describe Coccidiosis and Brooder pneumonia in chickens. **10**

Chittagong Veterinary and Animal Sciences University
Faculty of Veterinary Medicine
Department of Medicine and Surgery
MS in Medicine
Semester: January-June 2016
Subject- Avian Medicine
Course code: AVM-601
Total marks – 40
Time – 2 (Two) hours

(Figures in the right margin indicate full marks. Answer any **FOUR** questions)

1. (a) What is biosecurity? Describe the factors influencing biosecurity in poultry farm. **08**
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Chittagong Veterinary and Animal Sciences University

Faculty of Veterinary Medicine

Department of Medicine and Surgery

MS in Medicine

Semester: January – June 2016

Subject: Food Animal Medicine I

Course Code: FAM 601; Credit: 2

Total Marks: 40

Time: 2 (Two) Hours

(Figures in the right margin indicate full marks. Answer any **FOUR** questions)

1. a. Describe the etiology of bovine mastitis in details. **02**
b. Describe the strategies for therapy and prevention of mastitis. **05**
c. What are the economic significance of mastitis? **03**

2. Write down the cause, important clinical signs, pathognomonic post – mortem lesions, diagnosis, treatment, prevention and control of the following diseases: **05 X 2 = 10**
(i) Anthrax.
(ii) PPR.

3. a. What are the diseases that can be confused with brucellosis in pregnant cows? How would you differentiate them? **06**
b. A cow of 300 kg body weight is brought to the Large Animal Unit of SAQTVH, CVASU which is suffering from fever (106⁰F) and lameness. Clinical examination reveals the swelling of peripheral lymph nodes. What's your presumptive diagnosis? Write a prescription for the patient. **04**

4. a. Which helminthic disorder is the major cause of high mortality in buffalo calf? How would you treat and prevent the condition? **05**
b. Write down the clinical signs, diagnosis and treatment of nasal schistosomiasis in cows under field condition. **05**

5. a. Define wasting disease with example. Write down the important clinical signs and pathognomonic post – mortem lesions of tuberculosis (TB) and John's disease (Para TB) in cattle. How would you clinically manage them? **07**
b. Differentiate dermatophilosis from dermatophytosis. **03**

6. Write short notes on the following: **05 X 2 = 10**
(i) Colibacillosis in goat.
(ii) Rabies in cattle.

Chittagong Veterinary and Animal Sciences University
MS in Medicine Semester Final Examination- 2016
Course Title: Zoonotic Medicine (Theory)
Course Code: ZOM-601
Department of Medicine & Surgery
Time: 2 Hours; Full Marks: 40

Answers any eight (08) questions (5 marks in each question)

1. Focus on the disease burden of human rabies in association of dog bite in the Southeast Asia region.
2. What do you mean by “Mycobacterium tuberculosis complex”? “Tuberculosis is a most devastating infectious disease worldwide” to what extent you may agree or disagree.
3. Briefly discusses on the present status and control plan of tuberculosis in Bangladesh.
4. What is bioterrorism? Explain your opinion, whether you support bioterrorism or not. Point out the time events of anthrax used as bioterrorism.
5. Briefly discusses the ecological cycle of influenza A viruses. Why swine is called mixing vessel for influenza A virus?
6. Explain your views on zoonosis, and zoonotic diseases transmission.
7. Highlights the interim guidance: testing algorithm for pregnant women with history of travel to an area with Zika virus transmission, with/without clinical symptoms.
8. Briefly discuss the speculation of “zika virus infection and microcephaly in neonate”.
9. Focus on the chronology of outbreaks due to Nipah virus in Bangladesh. Briefly describe the interventions that could adopt to prevent Nipah virus infection in human.
10. Describe the natural reservoir and transmission of Middle East Respiratory Syndrome (MERS) and Severe Acute Respiratory Syndrome (SARS).

Chittagong Veterinary and Animal Sciences University
Faculty of Veterinary Medicine
Department of Medicine and Surgery
MS in Medicine

Semester: January – June 2016

Subject: Production Diseases of Dairy Animals

Course Code: PDD 601; Credit: 2

Total Marks: 40

Time: 2 (Two) Hours

(Figures in the right margin indicate full marks. Answer any **FOUR** questions)

1. a. Define Production Diseases. How do you manage them? **04**
b. Define ketosis. Write down the etiology, clinical findings, diagnosis, treatment, prevention and control of ketosis in cattle. **06**

2. What is Pregnancy Toxemia in ewes? Write down the synonyms, etiology, clinical findings, lesions, diagnosis, treatment, prevention and control of Pregnancy Toxemia in ewes under field condition. **10**

3. Define Downer cow syndrome. Describe the etiology, clinical findings, lesions, treatment, prevention and control of Downer cow syndrome in relation to animal welfare considerations. **10**

4. Define Fatty Liver Disease in cattle. Write down the etiology, clinical findings, diagnosis, treatment, prevention and control of Fatty Liver Disease in cattle. **10**

5. a. What is gestation? Mention the common causes of termination of gestation in dairy cattle of Bangladesh perspective. **05**
b. Classify mastitis. Write down the line of treatment of acute mastitis of a cow which is brought to the Large Animal Unit of SAQTVH, CVASU. **05**

6. a. What is parturition? Describe the parturition of bovine along with function of relevant hormones. **05**
b. What are the reproductive hormones for dairy cattle? Write down their mode of action in details. **05**

– GOOD LUCK –

Chittagong Veterinary and Animal Sciences University
Faculty of Veterinary Medicine
Department of Medicine and Surgery (DMS)
January-June Semester Final Examination 2016
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 | What is Lumpy skin disease in cattle? Why it is so important? | 3 |
| | b | Discuss different aspects of lumpy skin disease | 7 |
| 2 | a | Enumerate congenital defects of skin | 3 |
| | b | Describe Etiology, pathogenesis, clinical findings and treatment of urticaria in horses | 4 |
| | c | What are the principles of treatment of skin diseases | 3 |
| 3 | a | Discuss about sex hormone imbalances | 6 |
| | b | Write down the clinical presentations and treatment of canine hyperadrenocorticism. | 4 |
| 4 | a | What is bacterial pyoderma and how does it develop in dogs? | 3 |
| | b | Classify bacterial pyoderma. Describe diagnosis and its management | 7 |
| 5 | a | Write down the management allergic skin diseases in dogs | 5 |
| | b | How will you treat defects in cornification of canine skin. | 5 |

Good Luck