

Chittagong Veterinary and Animal Sciences University

MS in Microbiology

January-June Semester, 2018

Advanced General Virology

Course code: AGV-601

Total marks: 40; Time: 2 hours

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

1	a	Explain lysogenic and lytic cycle of bacteriophage.	3
	b	Illustrate one step growth curve of bacteriophage.	7
2	a	Compose on antiviral drugs list and their mechanism of action.	10
3	a	Explain replication process of DNA virus.	10
4	a	Summarize contribution of different scientists in the field of virology.	10
5	a	Explain virus purification and inactivation process.	10

Chittagong Veterinary and Animal Sciences University
MS in Microbiology Final Examination
January - June Semester, 2018
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) Name the main dermatophytes affecting animals and the main hosts of each. Describe the microscopic aspects of asexual spores produced by fungi of veterinary importance. 2+3
- b) List the clinically significant mucoraceous zygomycetes. Write down the morphological features of members of *Mucorales*. 2+3
2. a) Give a classification of clinically relevant fungi. Write down the principal virulence determinants of *Trichophyton* species. 2+3
- b) Briefly describe the structures of fungal cell wall and plasma membrane. 5
3. a) Enumerate the members of the *Rickettsiales* of veterinary importance along with the disease conditions they cause in animals. Illustrate the possible consequences of infection with *Ehrlichia canis*. 2+3
- b) Write down the cellular products produced by *Aspergillus*. List the principal characteristics of the organisms in the class *Mollicutes*. 3+2
4. a) Along with their modes of action name the toxins produced by cyanobacteria. List the genotyping techniques usually employed for *Coxiella burnetii*. 3+2
- b) What is fungal dimorphism? Summarize the immunological tests, and their interpretation, used to diagnose mycoses caused by the main dimorphic fungi. 1+4
5. a) Classify antifungal drugs and write down their modes of action. 6
- b) Describe the laboratory investigation procedures to be followed for the identification of *Malassezia pachydermatis*. 4

Chittagong Veterinary and Animal Sciences University

MS in Microbiology Final Examination

January – June Semester, 2018

Course title: Advanced General Bacteriology

Course Code: AGB-601

Full marks: 40; Time: 2 hours

Answer any 4 (FOUR) questions.

1. Enumerate the characteristics of prokaryotic protists. Name chemical constituents of the cell wall of Gram positive bacteria and different layers of endospore produced by bacteria. Differentiate slime layer from capsule produced by bacteria. 10
2. What do you mean by essential and non-essential nutrients for bacteria? What are the features of active transport seen in bacteria for movement of nutrients? Differentiate active transport from passive diffusion. 10
3. Describe the basic characteristics of respiratory catabolism. What do you mean by terminal electron acceptor for metabolism in bacteria? What would the products if bacteria use oxygen, nitrate, sulphate and carbon-di-oxide as terminal electron acceptor? 10
4. What is the influence of water activity (a_w) in the growth of bacteria? Why certain bacteria are able to grow in extremely cold environments? How mRNA is synthesized in bacteria? Which structures in bacteria carry genetic code, codon and anticodon? 10
5. Differentiate constitutive enzymes from inducible enzymes. How production of an inducible enzyme is regulated in bacteria? How F factor is transferred from one bacterium to another? Give the ideal characteristics of a plasmid vector that should be considered for gene cloning in bacteria. 10

Chittagong Veterinary and Animal Sciences University
MS in Microbiology
January-June Semester, 2018
Industrial Microbiology
Course code: IMB-601
Total marks: 40; Time: 2 hours
 (Figures in the margin indicate full marks. Answer any four questions)

1	a	Explain opportunities and challenges of tomorrow's industrial microbiology.	10
2	a	Distinguish fossil fuel versus biofuel.	2
	b	Write up the different microorganisms which are used for the production of biofuel.	2
	c	Illustrate any two biofuel with their use in different industries.	6
3	a	List types of containment and their basis of classification.	2
	b	Summarize operational procedures of BSC-III and BSC-IV.	8
4	a	Tell the name of some widely used fermented products.	2
	b	Appraise production process of any two important fermented products.	8
5	a	Define and classify enzyme.	2
	b	Summarize application of various kinds of enzyme.	8

Chittagong Veterinary and Animal Sciences University
Department of Dairy Microbiology and Veterinary Public Health
MS in Microbiology, Final Examination -2018
Course Title: Food Microbiology, Course Code: FMB-601
Total Marks: 40 Time: 2 Hours

Answer any four questions from the following. The figures in the right margin indicate full marks.

- 0 a) Explain the following terms in aspect of history of microorganisms in food: (0.5x4=2.0)
 Prescientific era, Food gathering period, Food producing period, Food Legislations of Bangladesh.
- b) Complete the following table: (0.5x10=5.0)

Conditions / Common Names	Causal Agents
Neck rot of bananas	
Brewer's Yeast	
	<i>Cladsporium sp.</i>
Burnt/ Caramel flavor of milk	
Whiskers on meat	
----- flavor in Egg	<i>Streptomyces sp.</i>
Stale fishy odor of fish	
	<i>Rhizopusstolonifer</i>
French dry Sherry	
	Acid on the iron of the can

- c) Define pH? Explain the effects of O-R potential of food in microbial growth. 1+2

- 02 a) Define Spoilage of food. Illustrate the criterions that should be assured in a product to be fit as a food. 1+2
- b) Establish the relationship between D and Z value with example. 2
- c) Differentiate the following terms: (1x5=5)
- Grade A raw milk for pasteurization and Grade A pasteurized milk
 - Simmering and Boiling
 - Food Borne Infection and Intoxication
 - CCP¹ and CCP² 1+2
 - Commercially sterile and Luncheon meat

- 03 a) Name the groups of organisms that cause the spoilage in fruits and vegetables. Write some microbial spoilage in fruits and vegetables. 1+3
- b) Illustrate the underlying mechanism of mold formation in cereal products. 2
- c) Prepare a list of common beverages and classify wines. 2+2

- 04 a) Compute the rate of contamination of feed with B₁aflatoxin if the milk of a milch cow contains a concentration of 0.5 mg B₁aflatoxin/liter of milk.
- b) What is Food Control? Prepare a list of some national and international food control Agencies. 1+2
- c) Sketch the underlying mechanism of smoking in food preservation. Design a SOP for organoleptic inspection of a raw fish market. 2+3

- 05 a) Define food borne disease outbreak. Design a guideline for investigating an outbreak of Botulism. 1+4
- b) Write short notes on: (2x2.5=5)
- Salmonellosis
 - SCP

Scenario-2: Information in the table below is taken from a submitted script of "Risk factors therapeutics of Peste des Petits Ruminants in goats, Veterinary Hospital-based Case-Control Bangladesh" to the Journal of Preventive Veterinary Medicine

Factor	Category	PPR Positive/Total tested (%)	P
Year	2011	151/713 (21.2)	0.012
	2012	177/763 (23.2)	
	2013	188/728 (25.8)	
	2014	196/752 (26.1)	
	2015	210/732 (28.7)	
Season	Winter	166/646 (25.7)	<0.001
	Summer	151/1296 (11.7)	
	Rainy	605/1746 (34.7)	
Rearing system	Intensive and semi-intensive	793/2424 (32.7)	<0.001
	Free range and tethering	120/1229 (9.8)	
Breed	Black Bengal	294/1059 (27.8)	0.015
	Jamunapari and cross	628/2629 (23.9)	

Q.4. Interpret the proportionate prevalence of PPR in goats by different factors. (Point 3)

Q5. Calculate and interpret appropriate measures of effect. (Point 8)

Q6. Can you calculate measures of impact and measures of population impact based on the information in the table? Justify your answer. (Point 4)

Scenario-3: A storm of abortion was recorded in certain dairy cattle farms in Chittagong during the last week. The investigation team has confirmed the outbreak which was caused by *Leptospira hardjo*.

Q7. What measure will you consider to assess the magnitude of the outbreak? (Point 3)

Q8. Are you able to calculate "Basic Case Reproduction Number" and "Net Case Reproduction Number" in the outbreak situation? (Point 5) and what are the implications of these? (Point 2)

Chittagong Veterinary and Animal Sciences University
Faculty of Veterinary Medicine
Department of Medicine and Surgery
MS in Medicine Final Examination' 2018
Semester: January - June
Sub: Veterinary Dermatology
Course Code: VED-601

Total Marks: 40, Time: 2 hours

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

1. a. Write down the importance of skin disease management in veterinary practice. 04
b. Define primary and secondary skin diseases. Give five examples of each. 04
2. a. How can you diagnose skin disease of animals? 04
b. Write down 10 skin disorders of dog. 04
3. Differentiate: hyperkeratosis from parakeratosis, folliculitis from impetigo, nodules from vesicle, wart from tumour 08
4. a. What are the skin samples you will collect in parakeratosis, mange, folliculitis and impetigo? What tests will you do and what will be findings? 04
b. List 10 commercially available drugs used only for skin disorders. 04
5. a. Define photosensitisation. How can you diagnose photosensitisation in cattle? 04
b. Write down the remedial procedure of a photosensitised cow. 04
6. Write down treatment procedure for the following diseases: 4×02 = 08
 - a. Ringworm
 - b. Allergic dermatitis
 - c. Parakeratosis
 - d. Tick infestation
7. Write short notes (any two) on: 2×04 = 08
 - a. Contagious ecthyma in goat
 - b. Yeast dermatitis in a dog
 - c. Lice infestation in pigeon
 - d. Lumpy wool in sheep

M.S. in Surgery; January-June Semester-2018
Subject: Zoo, Wild and Lab Animal Anaesthesiology (Theory)

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 five modern gaseous anaesthetic those are suitable for Lion anaesthesia. 02
(b) Write down the mechanism of action for inhalant anaesthetic. 05
(c) How will you consider MAC value for the Birds and reptiles? 03
2. (a) What are the basics for monitoring of anaesthesia? 03
(b) What is the importance of capnography during gaseous anaesthesia in wild animals? 04
(c) What are the relation and impact of hyperthermia during wild life capture? 03
3. (a) What are the signs of airway obstruction? 03
(b) How will you maintain airway during anaesthesia of zoo animals? 07
4. (a) What are the possible sources of oxygen for oxygen therapy in wild animals? 04
(b) Write down the principles of pain management in animals. 04
(c) Mention the drug groups with examples, which act as a pain killer in animals. 02
5. (a) Write down a checklist of immobilizing drugs for capture of a wild animal. 03
(b) Briefly describe the different types of dart used in zoo animal practices. 05
(c) Write down the treatment of capture myopathy in wild animals. 02
6. Write short notes on *any two* of the followings- 2x5=10
 - (a) CPR
 - (b) Antivenom
 - (c) Endotracheal intubation in ruminants
 - (d) Mechanism of drug delivery in blow darts

M.S. in Surgery; January-June Semester-2018

Subject: Large Animal Surgery (Theory)

Course code: LAS 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) Differentiate between the cosmetic and plastic surgery. 02
(b) Briefly describe the different stages of wound healing in large animal surgery. 05
(c) What are the common surgical affections of gastro-intestinal system in ruminants?
How will you treat a cow suffering from left sided abomasal displacement? 03
2. (a) Mention the name of common antiseptics with concentration used in large animal surgery. 03
(b) How will you prepare the surgical site for abdominal surgery in large ruminants? 04
(c) Briefly describe the postoperative medication for large animal surgery. 03
3. (a) How will you perform a dermoid surgery in a Holsten Friesian cow? 03
(b) Write down the etiology, clinical signs, diagnosis and treatment for umbilical hernia in a calf. 05
(c) What are the merits and demerits of oblique para-lumbar incision for C-section in large animals? 02
4. (a) Why might you hesitate to cast a patient with marked abdominal tympany for surgery?
Why is such a patient not a good prospect for general anaesthesia? 03
(b) How will you repair a chronic vaginal prolapse in cows? 04
(c) Explain episiotomy practiced for large animal surgery in the field. 03
5. (a) Draw a normal anatomy of the cow's teat. What are the common causes of teat obstruction in cow? 04
(b) How will you correct a blind teat in a cow? 03
(c) How will you perform surgery for hematoma of the penis in Bulls? 03
6. Write short notes on *any two* of the followings- 2x5=10
 - (a) Punch-skin grafting
 - (b) Laparoscopic cryptorchidectomy
 - (c) Trimming of claws in cattle
 - (d) Septic arthritis in large animal

Chittagong Veterinary and Animal Sciences University
Faculty of Veterinary Medicine
Department of Medicine and Surgery
MS in Surgery, Semester: January-June, 2018
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. Write in detail the patient preparation for anaesthesia and surgery in different animals. 10.0
2. Mention the types of anaesthesia and describe the mode of action of local anaesthetics and their important properties. 10.0
3. Why GA is usually not consider for large animals? Describe different nerve blocks for facial and limb regions with indications in ruminants. 10.0
4. Mention different parts of inhalation anaesthetic machine and ET with intubation technique. Why inhalation anaesthesia is more advantages than injectable anaesthesia. What are the types/ methods of application inhalation anaesthesia? 10.0
5. Why anaesthetic records are important? Explain anaesthetic recording system. What are the indications of muscle relaxant in large animals? 10.0
6. Write short notes on ventilation technique and anaesthetic immunology. 10.0

Chittagong Veterinary and Animal Sciences University
Faculty of Veterinary Medicine
Department of Medicine and Surgery
M. S. in Surgery, Semester: January-June, 2017
Subject: Orthopaedic Surgery
Course Code: ORS 601; Credit: 2
Total Marks: 40
Time: 2 (Two) Hours

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

1. How will you analyze the fracture healing? Write down the fracture healing process. What is the bone healing time according to age? 10.0
2. Define fracture with different classification and causes of fracture. Draw and describe the blood circulation of bone. 10.0
3. Enlist the major orthopaedic problem in dogs and cats. Describe the detail orthopaedic examination procedure and test in some special clinical conditions. 10.0
4. Mention the special orthopaedic instruments, appliances and implants used for orthopaedic surgery. What are the reduction and immobilization techniques used for fracture correction. 10.0
5. Write down the components of connective tissues in joints. Draw and level the synovial joints. Classify joint diseases. Describe the medical and surgical management of arthritis in dogs. 10.0
6. How will you differentiate a dog suffering from hip dysplasia and hip dislocation? Write down the surgical correction of both conditions. 10.0

Chittagong veterinary and Animal Sciences University
Department of Medicine and Surgery, Faculty of Veterinary Medicine
MS in Medicine, January-June Semester-2018
Subject: Food Animal medicine (FAM-601), Total marks: 40, Time-2 hours

*(Figure in the right margin indicates full marks. Answer any **FOUR** questions)*

- Q1 a. What causes joint ill? How will you treat a patient of joint ill? What good practices you may suggest to prevent the joint ill in lamb? 4
- b. Seven years old cross bred cow was brought to SAQTVH, CVASU with a history of sneezing and bilateral muco-purulent nasal discharge. Primary examination of nasal mucosa showed partial obstruction of the nasal cavity. Diagnose this case in a systemic manner and give the treatment. 3
- c. List important parasitic diseases of farm animal. Mention the general prevention procedures of them. 3
- Q2 a. What is paratuberculosis? Why it named Johne's disease? Which disease has resembled with johne's in human? How is paratuberculosis transmitted and spread? 4
- b. Briefly describe the causal agent, transmission procedures, and diagnosis and treatment protocols of brucellosis in cattle. 4
- c. Write down the prognosis and post infection complications of following diseases. 2
i. FMD ii. PPR iii. Mastitis and iv. Ephemeral fever
- Q3 a. What do you mean by mucosal disease? Briefly describe the clinical manifestations, diagnosis and treatment of mucosal disease in cattle. 4
- b. Write down the common treatment procedures of contagious ecthyma and cowpox in ruminant. 3
- c. List the causes of neonatal diarrhea in ruminant? How will you differentiate them clinically? 3
- Q4 a. What are the possible routes of disease transmission in animal? List the vector borne diseases in ruminant. 2
- b. Briefly describe the trypanosomosis of food animal with emphasis on diagnosis and treatment. 4
- c. What is black disease in sheep? What is the role of liver fluke in black disease? Write a prescription of goat plague. 4
- Q5 a. What are the common causes of lameness in cattle? Enumerate the etiology, clinical signs, diagnosis and treatment of foot rot in cattle. 4
- b. Name the vaccines with their schedules, doses, routes and duration of interval practiced in cattle of Bangladesh. 4
- c. Do the differential diagnosis of following diseases. 2
i. Clinical and subclinical mastitis ii. Dermatophytosis and dermatophilosis

Good Luck