

Chittagong Veterinary and Animal Sciences University
Department of Physiology, Biochemistry and Pharmacology
MS in Biochemistry, July-December Semester, Final Examination-2016
Course Title: Veterinary Biochemistry (Theory)
Course Code: VEB-602
Full marks: 40; Time: 2 hours

Figures in the right margin indicate full marks. Answer any four (4) from the following questions.

1. a. Define phospholipids? Classify it based on their type of alcohol? Enlist different types of biologically important phospholipids? 5
- b. Differentiate between dextrin and dextrans? Write down the source and biomedical importance of these homoglycans? 5
2. a. Briefly describe the digestion procedure of protein feedstuff in ruminant? How rumen utilized NPN substances? 5
- b. Define mucopolysaccharides? Briefly describe about the sulfate containing acid MPS on the basis of their source, repeating unit and linkage? 5
3. a. What is atherosclerosis? How does it develop in our body? Which lipoprotein helps to reduce atherosclerosis? 5
- b. Write down the major differences of EMP pathway and HMP shunt? Write down the significance of phosphogluconate pathway? 5
4. a. Briefly describe the biomedical importance of central metabolic pathway? Why TCA cycle is called amphibolic in nature? 5
- b. Write down the fate of volatile fatty acid? Briefly describe about the propionate metabolism? 5
5. a. Enlist different products after metabolism of sulfur containing amino acid and tyrosine? Briefly describe about the toxicity of ammonia? 5
- b. How will you calculate the total number of energy (in terms of calories) after complete oxidation of 1 mole glucose to CO₂? 5

Chittagong Veterinary and Animal Sciences University

Faculty of Veterinary Medicine

Department of Physiology, Biochemistry and Pharmacology

MS in Biochemistry July- December Session, 2016

Course Name: **Bio-molecular, Molecular and Immuno-diagnostics** Course No.: **BMI-602**

[Figures in the right margin indicate full marks. Answer any Four (4) questions including Question No. 1]

Full Marks: 40

Time: 2 hours

1. a) Briefly describe: i) Fundamentals of Clinical Biochemistry Laboratory, ii) Predictive value, iii) Laboratory hazards and iv) Personal protective equipments in the laboratory. 1x4=4
- b) Write general overview, advantages and disadvantages of heparin as anticoagulant. 3
- c) Name the preservatives of urine. Mention the upper limit of serum albumin level for male and female in SI unit and conventional unit. 1+2=3

2. a) Briefly describe: i) Why is ESR tested? ii) Why is HbA1c tested? iii) Total blood count and iv) Homeostasis. 1x4=4
- b) What do you know about hemoglobin? Discuss about abnormal hemoglobin with mentioning at least four(4) types of abnormal hemoglobin including their differences with normal hemoglobin. 1+2=3
- c) Define differential white blood cells count. Write down the reference ranges for differential white blood cells count in normal adult. 1+2=3

3. a) Briefly describe: i) What is DNA profiling? ii) What is paternity testing? iii) Advantages of using real time PCR and iv) DNA template. 1x4=4
- b) Name the components required to perform PCR. PCR cycle consists of three steps – Explain. 1+2=3
- c) Explain briefly the different types of PCR. Discuss the application of PCR. 1+2=3

4. a) Briefly describe: i) Tumor markers, ii) Immunoassay, iii) Flow cytometry and iv) Autoimmune hemolytic anemia. 1x4=4
- b) Explain briefly ELISA. Show briefly detection of T₄ using ELISA. 1+2=3
- c) Write the importance for assay of I_gM and I_gE. When C- peptide test is performed? 1+2=3

5. a) Briefly describe: i) Side effects of antibody therapy, ii) Who can donate blood? iii) Cross matching and iv) Y- chromosome analysis. 1x4=4
- b) What is meant by monoclonal antibody? Discuss briefly the diagnostic application of monoclonal antibody. 1+2=3
- c) Discuss briefly the process and importance of mitochondrial DNA assay 3

Chittagong Veterinary and Animal Sciences University
Department of Physiology, Biochemistry and Pharmacology

MS in Biochemistry Final Examination 2016

Semester: July-December

Course Title: Animal Hormones (Theory)

Course Code: ANH-602

Total marks: 40, Time: 2 hours

(Figures in the right indicate full marks. Answer any FOUR (4) questions).

- 1 a. List the hormones involved in glucose metabolism. Why oxytocin is called neurohormone? 3
b. What is catecholamine? List the physiological activities of adrenal medullary hormone. 4
c. What are the gonadotrophin hormones? How does vasopressin regulate water balance in goat? 3
- 2 a. List the hormones secreted from placenta. How does progesterone and prostaglandin regulate pregnancy? 3
b. Write down the name of 5 local and 5 general hormones. Write down the source and functions of gastrin, cholecystokinin and insulin. 4
c. What is androgen? How is testosterone help to develop male characteristics? 3
- 3 a. List the name of trophic hormones. Do you find any difference between protein and steroid hormones? 4
b. What is BMR? Write down the physiological properties of thyroxine. 3
c. What is the precursor of steroid hormone? How is aldosterone secreted from cholesterol? 3
- 4 a. List the name of water regulating hormones in cow. Write down the role of aldosterone in maintaining water volume in animal body. 4
b. What are the immunosuppressive hormones? Write down the physiological activities of cortisol. 3
c. What are the raw materials of thyroid hormone? Show the synthesis of thyroxine in sketch form in dog. 3
- 5 a. Classify hormone. Write down the mode of action of steroid hormone. 4
b. What are the calcium regulating hormones? What are relationships between PTH, calcitonin and vit D? 3
c. Write a short note on a. prolactin b. endorphins c. pheromones 3

Chittagong Veterinary and Animal Sciences University

Faculty of Veterinary Medicine

Department of Physiology, Biochemistry and Pharmacology

MS in Biochemistry July- December Session, 2016

Course Name: **Recombinant DNA Technology**, Course No.: **RDT-602**

[Figures in the right margin indicate full marks. Answer any Four (4) questions including Question No. 1]

Full Marks: 40

Time: 2 hours

1. a) Briefly describe: i) Gene, ii) Genome, iii) Cosmid and iv) Virus as vector. 1x4=4
b) Briefly explain different types of plasmid. Show the site specificity of the following restriction enzymes: i) Hae III and ii) Eco RI. 1+2=3
c) Define donors. Write down the characteristic of a vector. 1+2=3

2. a) Briefly describe: i) Fusion, ii) Ploidy, iii) Transduction and iv) Zygoity. 1x4=4
b) Explain transposon. Discuss different classes of transposon. 1+2=3
c) Transposition can be classified as "autonomous or non-autonomous" in both the classes of transposons- Justify. Discuss the application of transposons. 1+2=3

3. a) Briefly describe: i) cDNA, ii) Recipient cells, iii) Genomic library and iv) Site specific recombination. 1x4=4
b) Define trait. Show with flow diagram, the basic steps of cloning. 1+2=3
c) What is nonsense mutation? Spontaneous mutation on the molecular level can be caused by many process- explain. 1+2=3

4. a) Briefly describe: i) Drug resistant plasmids, ii) Illegitimate recombination, iii) Conjugation and iv) Meiosis. 1x4=4
b) Write down the basic steps of Southern blotting. 1+2=3
c) Comment on "Probes" in northern blotting. 3

5. a) Briefly describe: i) Lysogenic phage, ii) Transition mutation and iii) Frame-shift mutation. 1x3=3
b) Discuss the practical benefits from gene cloning in Agriculture and Medicine. 2+2=4
c) Compare the characteristics of Type I and II restriction endonucleases. 3

Chittagong Veterinary and Animal Sciences University
Department of Physiology, Biochemistry and Pharmacology
MS in Biochemistry, July-December Semester, Final Examination-2016
Course Title: Advanced Chemistry of Bio-molecules-II (Theory)
Course Code: ACB-602
Full marks: 40; Time: 2 hours

Figures in the right margin indicate full marks. Answer any four (4) from the following questions.

1. a. Define restriction enzymes? Write down the nomenclature of it? Draw the recognition sequence of *EcoRI*, *HaeIII* and *HindIII*? 5
b. What is isoenzyme? Write down some possible reason for the existence of isoenzymes? Give short notes on "lactate dehydrogenase"? 5
2. a. What is immobilized enzymes? Enlist some enzymes with their specific application in therapeutic, analytical, genetic engineering and Industry level? 5
b. Enlist some enzymes (with their interpretation) that are responsible for diagnosis of different disease in heart, liver and GI tract? 5
3. a. What is phytohemagglutinins? Write down the use of it in medical research and carbohydrate recognition? 5
b. Write down the different functions of interferon? How interferon release in our body? Enlist some interferons that are present in human body? 5
4. a. Enlist the different derivatives of Hemoglobin? How hemoglobin carry O₂ and CO₂ in blood? 5
b. What is C-reactive protein? Write down the different physiological functions of plasma protein? 5
5. a. Enlist different methods that are use for purification of protein? Describe different types of Chromatography technique for protein purification? 5
b. Define enzyme inhibition? Briefly describe the competitive inhibition of enzyme? Enlist some enzymes with their specific substrate and competitive inhibitor? 5

Chittagong Veterinary and Animal Sciences University
Department of Physiology, Biochemistry and Pharmacology

MS in Physiology Final Examination 2016

Semester: July-December

Course Title: Excretory Physiology and Acid-base Balance (Theory)

Course Code: EPA-602

Total marks: 40, Time: 2 hours

(Figures in the right indicate full marks. Answer any FOUR (4) questions).

- 1 a. List the hormones of urinary system. What are the physiological roles of nephron? 3
- b. What are the substances reabsorbed by the renal tubules? Write down the importance of juxtaglomerular apparatus. 3
- c. How is urine volume regulated? 4

- 2 a. List the excretory organs of cow. How is pH of blood regulated? 3
- b. Write down the mechanism of transport of oxygen in blood. 3
- c. How does Rennin-Angiotensin-Aldosterone mechanism maintain blood pressure? 4

- 3 a. What is tubular reabsorption and secretion? Enlist different reabsorptive and secretive substances in a nephron. 3
- b. Write down the role of kidney in erythropoiesis. 3
- c. Write down the role of respiratory system for maintaining blood pH in sheep. 4

- 4 a. Write down the chemical control of breathing in horse. 3
- b. What is the role of sweating and panting in thermoregulation of dog? 3
- c. How do cattle maintain body temperature in hot weather through cutaneous circulation? Briefly describe about apocrine gland. 4

- 5 a. Define Chloride shift. What is the role of Chloride shift in acid-base balance? 4
- b. Write down the hormonal effect of sebum secretion. 3
- c. Write short note on a. respiratory quotient b. metabolic acidosis 3

Chittagong Veterinary and Animal Sciences University
Department of Physiology, Biochemistry and Pharmacology

MS in Physiology Final Examination 2016

Semester: July-December

Course Title: **Digestive Physiology and Bioenergetics (Theory)**

Course Code: DPB-602

Total marks: 40, Time: 2 hours

(Figures in the right indicate full marks. Answer FOUR (4) questions).

- 1 a. State the physiological role of hydrochloric acid in food digestion. How is gastric juice secretion regulated in animal body? 4
- b. What are the sources of succus entericus? Write down the functions and hormonal regulation of succus entericus. 3
- c. Enlist the different types of enzymes in pancreatic juice with their functions. State the role of pancreatic HCO_3^- in duodenum. 3
- 2 a. What is meant by villous pump? Describe the mechanism of absorption of protein, water and Vit B12. 4
- b. Write down the mechanism of Na^+ , Cl^- and K^+ absorption through intestinal epithelium. 3
- c. Enlist the major pathways of carbohydrate metabolism? Write down the reaction of pay-off phase of EMP pathway. 3
- 3 a. How rumen microbes produce VFA from polysaccharides? BCVFA has significant role in protein digestion of ruminants, justify this statement. 4
- b. How is lipid digestion occurred in simple stomach animal? 3
- c. "Production of excess NH_3 is harmful for animal body" Justify this statement? How excess NH_3 utilized in animal body? Briefly discuss about it. 3
- 4 a. What do you mean by luminal phase enzymes and membranous phase enzymes? Write down the mechanisms of nucleic acid digestion in animals. 4
- b. Write down the physiological importance of crop, mechanical stomach, glandular stomach and ceca in chicken. 3
- c. Why "store glycogen" is called "fuel reserve" in our body? Briefly discuss the breakdown process of glycogen in hepatocyte? 3
- 5 a. How will you calculate the total number of ATP after complete oxidation of one mole valeric acid? Which compound act as ferry boat in lipid metabolism and why? 4
- b. Define different types of movements available in small intestine. Write down the nervous and hormonal control of motility of stomach. 3
- c. Write short note on: Calf's digestion. 3

Chittagong Veterinary and Animal Sciences University
Department of Physiology, Biochemistry and Pharmacology

MS in Physiology Final Examination 2016

Semester: July-December

Course Title: Concepts of Animal Welfare (Theory)

Course Code: CAW-602

Total marks: 40, Time: 2 hours

(Figures in the right indicate full marks. Answer any FOUR (4) questions).

- 1 a. List the 5 freedoms of animal welfare. Where and how the concept of animal welfare is initiated in Bangladesh? 3
- b. What are the roles of veterinarians in animal welfare? 4
- c. Briefly discuss the guidelines of OIE to develop animal welfare standards for its member countries. 3
- 2 a. What are the causes of transport stress? Discuss the relationship between hypothalamo-pituitary-adrenal axis and stress. 4
- b. How do you assess the welfare of farm animal? List the welfare indicators of farm animal. 3
- c. What physiological changes occur during short and long term restraint of animals? How do these changes relate to animal welfare? 3
- 3 a. Define ethology and ethics. Discuss four views about humanity's duties to animals. 3
- b. What are the religious views on animal? Discuss animal welfare with respect to religious perspectives. 3
- c. How attitude and behavior of farmers and stockperson is influences the productivity of dairy cow? 4
- 4 a. List major welfare issues in laboratory and wild animals. 3
- b. What is 3 Rs? What are the commonest species used worldwide in laboratories? What is a humane end point in an experiment? 3
- c. What are the ways of control of free-roaming dog in Bangladesh? 4
- 5 a. Briefly describe the stray dog violations in Bangladesh perspectives. What are the suggestive ways to improve stray dog welfare in Bangladesh? 4
- b. Briefly describe about recent development and progress of animal welfare in Bangladesh? 3
- c. Write a short note on a. HARs of dairy cow b. Human-tiger conflict in Bangladesh 3

Chittagong Veterinary and Animal Sciences University
Department of Physiology, Biochemistry and Pharmacology

MS in Physiology Final Examination 2016

Semester: July-December

Course Title: Integration Physiology (Theory)

Course Code: IPH-602

Total marks: 40, Time: 2 hours

(Figures in the right indicate full marks. Answer any FOUR (4) questions).

- 1 a. Do you find any difference between sympathetic and parasympathetic nervous system? What are the neurotransmitters secreted from autonomic nervous system? 3
- b. List the name of receptors in dog. Why nervous system is called controlling system of animal body? 3
- c. Classify neuron. How does nervous system propagate action potential? 4
- 2 a. Write down the physiological role of muscles. How is calcium help in muscle contraction? 3
- b. Write down the mechanism of smooth muscle contraction. 3
- c. Define neuromuscular junction. Write a short note on action potential and refractory period. 4
- 3 a. What is the role of calcium in nervous system? Write down the properties and composition of synapse. 3
- b. Write down the mechanism of release of acetylcholine. 3
- c. What are ganglia and nuclei? State the functions of autonomic nervous system. 4
- 4 a. State the location of organ of corti. How does animal hear? 3
- b. List the sensory modalities. Differentiate between rod and cone cells. 3
- c. What are the functions of smell? Write down the effects of testosterone, estrogen, and progesterone on sebum production. 4
- 5 a. Enlist the different layers of eye. Describe the role of aqueous humor and vitreous humor in visualization. 4
- b. Write down the compositions of reflex? What are differences between monosynaptic and disynaptic reflex? 3
- c. Write short note on a. Skin b. CSF 3

Chittagong Veterinary and Animal Sciences University
Department of Physiology, Biochemistry and Pharmacology

MS in Physiology Final Examination 2016

Semester: July-December

Course Title: Wild life Physiology (Theory)

Course Code: WPH-602

Total marks: 40, Time: 2 hours

(Figures in the right indicate full marks. Answer any FOUR (4) questions).

- 1 a. Write down the learning objectives of wild animals. List the name of wild life organizations that are working nationally and globally to protect wild animals. 3
- b. What are the veterinarian's duties to wild animals? 3
- c. What is an ectothermic animal? How do ectotherms cope with extreme cold? 4
- 2 a. Briefly describe about wild life conservation program in Bangladesh. 3
- b. How does snake and fish regulate water in their body? 3
- c. What are the physiological differences in camel than other mammals? 4
- 3 a. What are the structures involved in osmoregulation? Briefly describe the physiology of seals. 3
- b. How does penguin respond in extreme cold? 3
- c. Write down the reproductive physiology of blue whale. 4
- 4 a. Write down the differentiate points of chemoreception of vertebrate and invertebrate. 3
- b. How do mammals respond to changing environments? 3
- c. How does osmoregulation happen in marine air breathing vertebrates? 4
- 5 a. What are the reproductive peculiarities in turtle and tortoise? 3
- b. Briefly describe the digestive physiology of wild birds. 4
- c. Write short note on a. Hibernation b. Vision mechanism of fish 3

Chittagong Veterinary and Animal Sciences University
Department of Physiology, Biochemistry and Pharmacology
MS in Pharmacology July-December Semester Final Examination-2016
Course Title: Chemotherapy of Parasitic Diseases
Course Code: CPD-602
Total Marks: 40.0; Time: 2 hours

*Figures in the right margin indicate full marks. Answer any **Four (4)** questions from the followings:*

1. a) Explain the salient features of anthelmintics and why these are needed to livestock? 3.0
b) Write down the factors which enhance anthelmintic resistance. 3.0
c) Precisely describe pharmacology of two commonly used antitrepatodal drugs against liver and rumen flukes in livestock along with their dosage and routes. 4.0
2. a) Suddenly, an ox has been facing a problem of traveller's diarrhea. What kind of drug do you suggest on that case; cite its name and dose with mode of action. 2.0
b) Differentiate drugs belonging to Benzimidazole group. 4.0
c) Write down the therapeutic applications, pharmacodynamics and pharmacokinetics of Niclosamide and Praziquantel in dog. 4.0
3. a) What are the differences between coccidiostats and coccidiocidal drugs? Enlist the anti-coccidial drugs with their dose, routes and mode of action on a tabular format. 4.0
b) Do you think the popular ectoparasiticide ivermectin is useful on blood protozoal infection in human? If yes, how it works? Write its pharmacokinetic property, trade name with dosage. 4.0
c) What are the risks of toxicosis from ivermectin use in cow? 2.0
4. a) Write down the general considerations of using anticestodal drugs. 2.0
b) "Levamisole acts as an immune modulator"- Justify the statement. 3.0
c) How do piperazine and levamisole work against ascariasis in calf? Explain the pharmacokinetics property, indications, doses and toxicity of both drugs. 5.0
5. Short note (any four): (2.5 × 4) = 10
 - a) Anti-blood Protozoal drugs
 - b) Anthelmintic toxicity
 - c) Ancient anthelmintics
 - d) Anthelmintic efficacy
 - e) Ectoparasiticide
 - f) Integrated Parasitic Control

July-December MS in Pharmacology Final Examination-2016
Department of Physiology, Biochemistry and Pharmacology
Faculty of Veterinary Medicine
Chittagong Veterinary and Animal Sciences University
Course Title: Toxicology of Pesticides
Course code: TOP-602; Total Marks: 40; Time: 2.00 hours

Answer any four (4) questions from the following:

- Q1. a. Define pesticides with examples. Differentiate organo-phosphorus poisoning from organo-carbamate poisoning. 5.0
b. Write down the clinical signs, diagnosis and line of treatment of organo-chlorine poisoning. 5.0
- Q2. a. Write down the mode of action, diagnosis and treatment of malathion poisoning. 5.0
b. Write down the mode of action, diagnosis and treatment of nicotine poisoning. 5.0
- Q3. a. Define and classify herbicides with examples. Briefly describe the treatment and management of herbicides poisoning. 5.0
b. How will you diagnose and treat acute arsenic poisoning. 5.0
- Q4. a. Briefly describe the diagnosis and treatment of ANTU poisoning. 5.0
b. How will you diagnose and treat the red squill poisoning? 5.0
- Q5. Write down the notes on (any four): 4x2.5 10
a. Rotenone b. DDT c. Honey bee sting d. Sulfer poisoning e. Fumigants f. Fungicides

Chittagong Veterinary and Animal Sciences University
Department of Physiology, Biochemistry and Pharmacology
MS in Pharmacology July-December Semester Final Examination-2016
Course Title: Toxicology of Drugs and Chemical Residues
Course Code: TCD-602 (T)
Total Marks: 40.0; **Time:** 2 hours

*Figures in the right margin indicate full marks. Answer any **Four (4)** questions from the followings:*

1. a) Define and classify residues. Explain the unwanted and dangerous side effects of drug residues? 3.0
b) List the factors of residues by drugs, chemicals and other agents in animals. 3.0
c) What will be the possible government strategy to eliminate drug residue for developing awareness? 4.0
2. a) Define hazards. Explain about potential health hazards relating to residues under public health concerns. 3.0
b) Differentiate between (any two): 3.0
i) Drug toxicity and chemical toxicity
ii) Multi drug resistance and Multiple microbial resistance
iii) Maximum Permissible Level and Maximum Residue Level
c) On what ways chemical agents used in growing plant and animal farming are reached into the food chain and how biosensor and immunosensor works to detect those agents? 4.0
3. a) Define tolerance and withdrawal time. What are the limitation for maintaining withdrawal time and tolerance level of veterinary drugs and chemicals? 4.0
b) What is safety margin of drug? How the level is maintained? Write down the detection procedure of antibiotic residues in animal bodies. 4.0
c) Explain the role of veterinarians and doctors to prevent the drug residues. 2.0
4. a) What is cytotoxic chemotherapy? Explain the principle and purpose of it. Mention the best choice of drugs for this therapy. 4.0
b) List in a tabular format about drug toxicity, side effects and contraindication of cephalosporin, cotrimoxazole, ciprofloxacin and azithromycin. 4.0
c) Write down the potential adverse effects of tetracycline and aminoglycoside drugs. 2.0
5. a) An antibiotic, once widely used in small and large animals; now completely banned from use in food animals - why? Suggest alternate safe choose and justify your suggestion. 3.0
b) Why Nitrofurantoin is harmful for shrimp industry? 2.0
c) Short note (any two): 5.0
i) NOAEL and LOAEL ii) FDA and USDA iii) Genotoxic

July-December MS in Pharmacology Final Examination-2016
Department of Physiology, Biochemistry and Pharmacology
Faculty of Veterinary Medicine
Chittagong Veterinary and Animal Sciences University
Course Title: Systemic Pharmacology; Course code: SPM-602
Total Marks: 40; Time: 2.00 hours

Answer any four (4) questions from the following:

- Q1. a. Classify intestinal stimulants with examples. Write down the dose, mode of action, indication, contraindication of vegetable purgatives. 5.0
b. Differentiate purgatives from laxatives? Write down the justification of use of emetics and anti-emetics. 5.0
- Q2. a. Differentiate bronchodilators from expectorants. Write down the dose, mode of action, indication, contraindication of salbutamol. 5.0
b. Write down the mode of action, indication and contraindication of general anaesthetics. 5.0
- Q3. a. Define and classify diuretics with examples. Write down the mode of action, dose, indication and contraindication of modern diuretics. 5.0
b. How will you differentiate high efficacy diuretics from low efficacy? Write down the use of urinary acidifier, antiseptics and alkalizer. 5.0
- Q4. a. How will you differentiate glycosides from alkaloids? Write down the dose, mode of action, indication, contraindication of heart tonic. 5.0
b. Write down the mode of action of heart depressant. How will you differentiate heparin from heart warfarin? 5.0
- Q5. Write short notes on (any four): 2.5x 4 10
a. Local anaesthetics b. Adrenaline c. Barbiturates d. Anticoagulants e. Thiazide diuretics f. Carminatives

Chittagong Veterinary and Animal Sciences University

Department of Physiology, Biochemistry & Pharmacology

MS (Pharmacology)

Final Examination-2016

July-December Semester

Sub: Endocrinology and Nutritional Pharmacology (ENP-602)

Total Marks: 40

Time: 2 hours

4 x 10 = 40

Answer the following questions (any four).

1. a). Define endocrine pharmacology. Differentiate endocrinology with endocrine pharmacology.
b). What is negative feedback mechanism: Write down the function of G_nRH & HCG.
c). What is EDC? How the EDC is calculated?
2. a). Define Hirsutism. Write down the etiology, classification, diagnostic workup & treatment of it.
b). From which organ most circulating testosterone derived in women?
c). Define Amenorrhea. How you evaluate in lab & treat it.
3. a). What is T₃ & T₄. Write down the indication, m/a, dose, adverse effects & contraindication of T₃ in cat.
b). Describe the adrenal hormone with their biosynthesis, function & contraindication.
c). You examine a mare 22 days after a known single ovulation. This image shows the mid-portion of the left uterine horn.
a). What is abnormal about the conception?
b). What is the significance of this finding?
c). What is likely outcome?
d). What action would you take?
4. a). Write down the clinical problem associated with the menstrual cycle.
b). Define Adolescent gynecology? Write down the specific problems of the adolescent.
c). What hormonal drugs used to prevent, maintain and terminate pregnancy.
d). Why ergomartin not used during labour by oxytocin used.
5. **Write Short note : (any five)**
(a) PRID & IUDs; (b) Spermicides; (c) Abruptio placental ; (d) Rh iso immunization;
(e) Steroid hormones ; (f) Insuline; (g) Rhodopsin cycle;

5 x 2 = 10

Chittagong Veterinary and Animal Sciences University

Department of Physiology, Biochemistry & Pharmacology

MS (Pharmacology)

Final Examination-2016

July-December Semester

Sub: Pharmacy (VPHA-618)

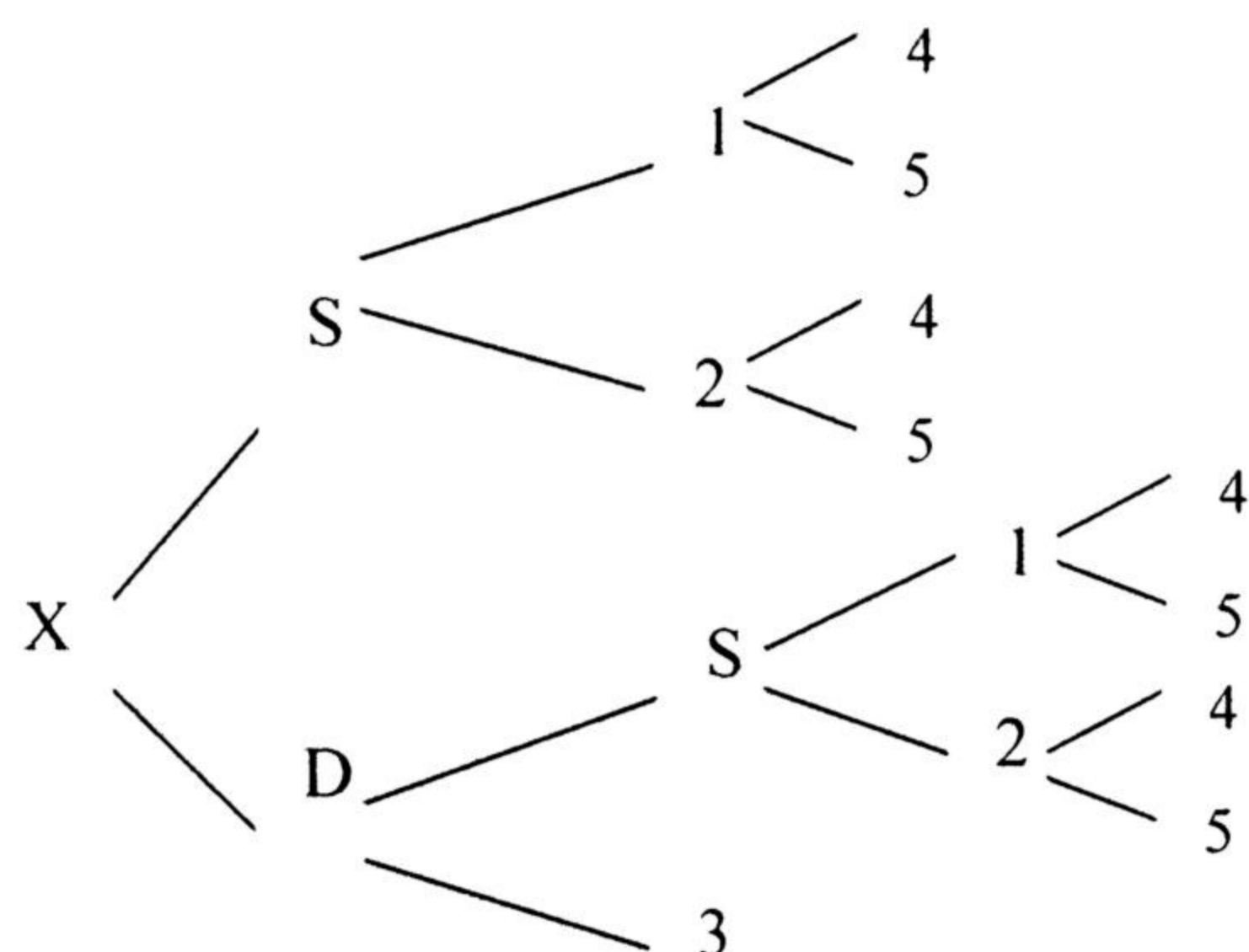
Total Marks: 40 Time: 2 hours

Answer the following questions any eight. Where question no 5 is compulsory.

8 x 5 = 40

1. Define pharmacy and classify pharmacy? "Drug Discovery is a historical advancement of medical science"-Describe briefly?
2. How will you start a modern pharmaceutical industry in your city?
3. What are the regulatory bodies to regulate all the regulatory matters related to drug, food and cosmetics in BD.
4. What is pharmacopoeia? Classify pharmacopoeia. How drug license, registration of drug or manufacturing license should be acquired?
5. Differentiate followings :
 - a. Drug, food, medicine, cosmetics & vaccine.
 - b. Forensic and governmental pharmacy.
 - c. Drug compounding and drug dispensing.
 - d. Drug standardization and packaging.
 - e. Hospital, clinics, mobile clinics & Ambulatory clinics.
6. What are the residual effects of drug in case of poultry drug use for human consumption? Write down the process to evaluate residual effects of drug in case of poultry.
7. **Write down the various parts of the following instrument with their functions: (any five)**
 - a. Distillation plant; b. Gelatin capsule filling machine; c. Rotary die machine; d. HPLC;
 - e. Tablet coating machine; f. Sachet filling machine.
8. How will you formulate, development and prepare a drug? And how you made a literature for these drugs?
9. **Write Short note : (any five)**
 - (a) Packaging; (b) Standardization; (c) Prescription ; (d) TT (Tablet triturates);
 - (e) Dissolution test apparatus ; (f) ISO certification; (g) Melamine & its assay principles; (h) OIE;
10. Write down common techniques for the preparation of drugs.

4. a) Define selection differential, selection intensity and genetic gain. 3
- b) In an animal selection study, the average milk production of Red Chittagong Cattle (RCC) is 1.5 liter/day, whereas the average milk yield of 300 selected RCC cows is 2.32 liter/day. The phenotypic standard deviation for milk yield 0.965 and the heritability for milk yield is 0.25. Calculate selection differential, selection intensity and genetic gain from the above assumptions. 4
- c) Calculate inbreeding co-efficient of individual "X" using the following pedigree relation 3



5. a) What do mean by economic value. 2
- b) Suppose the profit function for a commercial goat production farm is as follows: 8
- $$\text{Profit} = (\text{NOD} \times \text{CR} \times \text{NKB} \times \text{SUR}) \times [(\text{BW} + 120\text{ADG}) \times \text{DO} \times \text{Value}] - \text{Costs}$$
- Where NOD = number of does; CR = Conception rate; NKB = number of kid born; SUR = survival kidding to sale; BW = birth weight; 120= Slaughter at 120 days; ADG = average daily gain; DO= dressing out %; Value = carcass value per kg

Note no allowance has been made for replacement females (all slaughtered)

Suppose a client has a 800 ewe flock and can sell male goat at a carcass value of \$3/kg Given the following crossbreeding parameters. Figures in columns A, B & C refer to the average performance of 3 different breeds.

Trait	A	B	C	Individual %	Maternal %
CR	0.92	0.95	-	-	5
NKB	1.2	1.3	-	-	12
SUR	0.85	0.85	0.80	10	5
BW	3.5	3.7	3.9	5	2
ADG	0.198	0.193	0.234	8	10
DO	0.44	0.44	0.44	3	-

- i) Calculate the profit for a flock of straightbred animals of breed A
- ii) Calculate profit for an AB rotational crossbred flock
- iii) Calculate profit for an AB x C flock