AHP 4105-01: CLINICAL PATHOLOGY [70 Hours]

Purpose of Course

The course is intended to equip the students with knowledge, skills and attitudes that will enable them to handle specimen samples analyze them, and by aid of laboratory equipment arrive at a diagnosis as well as the etiology of a disease.

Expected Learning Outcomes of the course

At the end of this course the student will be able to:

1.   Describe sampling and analytical procedures of samples.

2.   Discuss the etiology of the cellular changes in the samples

3.   Apply practical skills in procuring samples, preserve and submit them for laboratory analysis

Course Content

1. Introduction to clinical pathology and explain its role in animal health and diagnostics.
2. Principles of hematology.
3. Collection of samples, cell counts, morphological and cellular changes during disease.
4. Classification of anemia and laboratory confirmation.
5. Disorders of leucocytes and platelets.
6. Laboratory evaluation of urinary tract disease; urinalysis.
   a. Determination of mineral levels, electrolytes and fluid balances.
7. Determination of plasma proteins and serum enzymes.
8. Laboratory evaluation of hepatic disease; Liver function tests.
9. Laboratory investigation of some digestive tract disorders, endocrine disorders, diagnostic cytology and body fluid analysis.

Pre-requisite: AHP 2202

Mode of Delivery

Lectures, practicals, demonstrations and assignments.

Instructional materials and/or Equipment

LCD projector/overhead projector, Chalk/markers, white board, appropriate animal specimens,

Centrifuges, spectrophotometers

Course Assessment

1.   Continuous Assessment 30%

2.   Written Examination 70%

Core Reading Materials for the course

Course Textbooks

1.   Jones, T. C., Hunt, RD, King NW (2007). Veterinary Pathology, 6th Ed. (2007), Academic Press.

2.   Slauson, D. O., Cooper BJ. (2012). Mechanisms of Disease - A Textbook of Comparative General Pathology, 3rd Ed. (2002), Mosby.

Recommended Reference Materials

Course Journals

1.   American Journal of Clinical Pathology

2.   Journal of Clinical Pathology

Reference Textbooks

1.   Kumar, V., Cotran R. S., Robbins, S. L. (2004). Basic Pathology, 7th Edn. Saunders.

2.   McGavin, M. D. and Zachary, J. F. (2007). Pathologic Basis of Veterinary Disease, 4th ed. (2007), Mosby

3.   Stockham, S. and Scott, M. A. (2002). Fundamentals of Veterinary Clinical Pathology, 2002 Blackwell Publishing.

Reference Journals

1.   The American Journal of Pathology

2.   Comparative Clinical Pathology

3.   Veterinary Clinical Pathology

MAASAI MARA UNIVERSITY

REGULAR UNIVERSITY EXAMINATIONS
2023/2024 ACADEMIC YEAR

FOURTH YEAR FIRST SEMESTER

SCHOOL OF NATURAL RESOURCE, ENVIRONMENTAL STUDIES AND AGRICULTURE

BACHELOR OF SCIENCE IN ANIMAL HEALTH AND PRODUCTION

COURSE CODE: AHP 4105-01
COURSE TITLE: CLINICAL PATHOLOGY

DATE: 15/12/2023   TIME: 1100-1300 HRS

1 a Define Clinical Pathology and explain its role in animal health. (5 marks)

   b List the clinical indications for performing urinalysis in animals.

                                                                    (5 marks)

   c Describe the classification of liver function tests. (10 marks)

2 a Describe the abnormalities in cell morphology that can assist in diagnosing specific diseases, including anemias, infections, and leukemias. (14 marks)

   b Describe the following terms:

        (i)   Band cell (2 marks)
        (ii)   Eosinophilia (2 marks)
        (iii)   Poikilocytosis (2 marks)

3 a Describe five causes of abnormal urine color. (5 marks)

   b List five key parameters evaluated during a urinalysis and describe what each parameter can indicate about an animal's health. (15 marks)

4 a Name any two (2) anti-coagulants used in blood collection for hematological examinations (2 marks)

   b Name and describe five essential minerals that are commonly evaluated in Veterinary Clinical Pathology, and explain their roles in animal health (15 marks).

   c State the phases of clinical pathology that lead to the generation of clinical pathological data. (3 marks)

5 a Define leukocytosis and leukopenia (4 marks).

   b Define thrombocytosis and thrombocytopenia. How do these conditions affect an animal's ability to form blood clots? (16 marks)

6 a Define then discuss the diagnostic use of hematocrit and hemoglobin levels and their clinical significance in classifying anemia in veterinary clinical pathology?   (12 marks)

   b Name four common samples collected in clinical pathology and explain the significance of each sample for diagnostic purposes. (8 marks)

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