

Name _____ Student Number _____

**UNIVERSITY OF TORONTO
Faculty of Arts and Science**

December 2009 FINAL Examinations

HMB302H1F Vertebrate Histology and Histopathology

Duration—2 hours

No Aids Permitted

PLEASE HAND IN

This exam is out of 75 marks.

There are 3 questions. Each question is worth 25 marks.

Instructions:

Answer all questions in the exam booklet provided.

Invigilators are not permitted to interpret questions to individual students. If you think that a question is ambiguous, answer it as you understand it, then make a note here. Please be specific.

Question 1 (25 marks). Draw a fully labelled diagram of each of the following terms. Briefly describe their function and location within the body. Fully labelled diagrams required; full sentence format required for description; 1 page maximum per term.

- 1.a. rectal-anal junction (5 marks)
- 1.b. segmental bronchus and its accompanying artery (5+5 marks = 10 marks total)
- 1.c. portal acinus model (10 marks)

Question 2 (25 marks). Lymph nodes are small oval lymphoid organs that have a variety of functions. Compare and contrast the journey of a single B-lymphocyte and a single T₄-cell (both activated by *Mycobacterium tuberculosis*) as the lymphocytes and bacterium enters a lymph node until the lymphocytes exits the lymph node. Describe and discuss the major histological and histopathology features the lymphocyte would encounter along its journey. Fully labelled diagrams required; full sentence format required for discussion; 2 pages maximum.

Question 3 (25 marks). Duodenal ulcers are the consequence of excess exposure of the mucosa to the aggressive actions of gastric acid-pepsin that overwhelms the body's normal defences. Discuss the pathobiology and histopathology of a late stage duodenal ulcer in relation to the fundamental plan of the digestive system. Fully labelled diagrams required; full sentence format required for discussion; 2 pages maximum.

Total marks = 75

Total pages = 2