

THE UNIVERSITY OF HONG KONG

ESSAY ASSIGNMENT FOR

Core Module XI: Concepts of Human Physiology

(PHYO6200 & MMPH6009)

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Write a 1000-word essay on **ONE** of the following topics. Submit the assignment to the Department of Physiology (L04-53, Laboratory Block, Faculty of Medicine Building, 21 Sassoon Road.) on or before **May 3, 2011**.

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1. Describe the involvement of the following in the circulatory adjustments to exercise:
  - a. Extracellular potassium
  - b. Extracellular ATP and adenosine
2. Give an account to the physiological changes in the acclimatization to high altitude.
3. Discuss the phases of blood clotting from immediate actions to wound healing.
4. Briefly describe ion channel classification and general functions.
5. The primary function of the lungs is to act as a gas exchanger. Discuss how each of the following would affect the gas exchange function of the lungs.
  - a. Ventilation
  - b. Ventilation and perfusion matching
  - c. Gas diffusion across the alveolocapillary membrane
6. Write an essay on nutritional balance in a healthy diet.
7. Explain how knowledge of the physiology of the actions and regulation of the secretion of cortisol contributes to the diagnosis of Cushing's syndrome.
8. Explain how the kidney excretes a dilute urine and a concentrated urine.