**Biology 3201 - Unit 1: Maintaining Dynamic Equilibrium II**

**Objectives - Chapter 13 Pp. 420-455**

Explain how the endocrine system helps maintain homeostasis.

Explain the general concept of a hormone and target cell or organ.

Compare how non-steroid and steroid hormones cause changes in target cells. Include:

- solubility in cell membrane

- location of receptors

- end result

Identify the location and function of the following endocrine glands:

(i) pituitary

(ii) hypothalamus

(iii) pineal

(iv) thyroid

(v) parathyroid

(vi) adrenal

(vii) pancreas (Islets of Langerhans)

(viii) thymus

(ix) ovaries

(x) testes

Identify the following hormones, their source gland, and explain their general effect on the human organism.

(i) melatonin

(ii) thyroxine

(iii) adrenaline

(iv) somatotropin (HGH- human growth hormone)

(v) insulin

(vi) glucagon

Describe the following feedback loops:

A) hypothalamus-pituitary complex as a negative feedback control

B) oxytocin as positive feedback control

Describe the regulation of blood sugar by controlled release of insulin and glucagon

Describe how a change in hormone secretion can result in each of the following disorders. How does each of these disorders affect homeostasis of an organism?

(i) dwarfism

(ii) giantism

(iii) hyperthyroidism

(iv) hypothyroidism

(v) diabetes mellitis

Investigate the role played by Frederick Banting and Charles Best (Canadians) in the discovery of insulin.

Discuss the technologies that prolong or terminate life, from a scientific and social basis.

**Core LAB #2** - Identifying Diabetes Mellitus