**Cell Structure and Function**

(Metabolism, Transport, Regulation & Excretion)

**Content**

Metabolism:

* organelles and their functions
* anabolic and catabolic reactions and organelles involved
* respiration (aerobic and anaerobic); inputs, outputs and organelles involved
* nutrients required and their uses including carbohydrates/simple sugars, proteins/amino acids, lipids/ fatty acids and glycerols, vitamins and minerals
* enzyme function including reduction in activation energy, lock and key principle
* factors that affect enzyme activity including pH, temperature, cofactors, co-enzymes

Transport:

* structure of the cell membrane as it relates to transport of materials
* methods of transporting materials including diffusion, facilitated diffusion, osmosis, active transport, endocytosis and exocytosis
* factors affecting exchange of materials including SA/Vol ratio , concentration gradients

Mitosis:

* function and significance of chromosome number in mitosis

DNA:

* structure of DNA including base pair model
* locations in the cell including nucleus and mitochondria
* role of DNA in the cell
* DNA replication—base pair model

Excretion:

* structure and function of the nephron as related to the formation of urine in the kidney
* processes of filtration, re-absorption and secretion
* deamination of amino acids in the liver

**Questions from Text**

Chapter 3 Chapter 4

Review Questions: 1-10 Review Questions: 1-10

Apply Your Knowledge: 1, 3-6 Apply Your Knowledge: 2, 4 & 7

Chapter 5 Chapter 17

Review Questions: 1-8 Review Questions: 1-9

Apply Your Knowledge: 3 & 4 Apply Your Knowledge: 1-5

Chapter 8

Review Questions: 1-8

Apply Your Knowledge: 2, 6, 7 & 9