**Mid-Term Assignment**

**Course Title: Human Physiology**

**Instructor: Dr. Sara Naeem**

**Total Marks: 30**

1. Explain homeostatic mechanism regarding the control of calcium in the body with reference to parathyroid hormone and calcitonin.

Ans:calcium metabolism or calcium homeostatis is the mechanism by which the body maintain adequate calcium level.

Calcium release from bone is regulated through parathyroid harmone. Calcitonin stimulates incorporation of calcium in bone.

**Calcium regulation**:

Parathyroid harmone regulates the level of calcium in the blood.

**Control of calcium level in the body:**

Calcium is involved in the helping to regulate levelof calcium and phosphate in the blood opposing the action of parathyroid harmone.

**Calcitonin reduce calcium level in the blood by two main mechanism:**

It inhibits the activity of osteoclasts, which are the cells responsible for breaking down of bone.

**REFERENCE TO PARATHYROID HARMONE:**

Parathyroid harmone regulates calcium level in the blood, largely by increasing the level when are too low. It does this through its action on kidneys, bones and intestine.

Bones:

Parathyroid harmone stimulates the release of calcium from large calcium stores in the bones into the blood stream.

**PARATHYROID HARMONE MAINTAIN HOMEOSTASIS:**

Parathyroid harmone in maintaining blood calcium homeostasis.

Parathyroid harmone increases blood calcium level when they drop too low. Conversely, calcitonin, which is released from the thyroid gland , decreases blood calcium levels when they becomes too high.

1. Give clinical differentiation between hypothyroidism and hyperthyroidism.

Ans**: Hyperthyroidism**:

As its name suggests hyperthyroidism accurs when your body makes too much of the thyroid harmones. Thyroxine(T4) and triiodothyronine(T3), and becomes overactive. If you have hyperthyroidism, you may experience a fast hearthbeat,

* Increased appetite,
* Anxiety,
* Sensitivity to heat,
* Or sudden weight loss.

Hyperthyroidism most commonly occurs in three ways:

Thyroiditis, or an inflammation of the thyroid

A thyroid nodule that produces too much T4 harmone

An autoimmune condition known as Grave’s disease

**HYPOTHYROIDISM:**

Hypothyroidism causes symptoms like:

* Slow metabolism
* Tiredness
* Weight gain

Having an underactive thyroid can decrease or slow down your bodily functions.

In hypothyroidism, our thyroid gland can’t make enough harmones to function well.

1. Classify enzymes and their function in digestion.

Ans: Digestive enzymes are classifies based on their target substance:

**Lipases:**

Lipases split fatty acids of fats and oils.

**Protease:**

Proteases and peptidases splits proteins into small peptides and amino acids.

**Amylases:**

Amylases splits carbohydrates such as starch and sugar into simple sugar such as glucose.

**THE ROLE OF ENZYEMES IN DIGESTION**:

Chemical digestion could not take place without the help of digestive enzymes. An enzyme is a protein that speeds up chemical reactions in the body. Digestive enzymes speed up chemical reaction that breakdown large food molecules into simpler molecules.