

**MID TERM ASSIGNMENT**  
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**Note: answers the following questions**

**Question No:1**

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

**Answer**

**HOMEOSTATIC\_MACHANISMS**

The homeostatic mechanisms have three interdependencies components for the variable being regulate. These are Receptor, Control center and effector. The receptor is the sensing basic component which monitors and responds to converts in to the internal and external environment.

**THE HOMEOSTATIC MACHANISMS\_IN HUMAN BODY**

The human body includes that mechanisms which help in the body regulates. Includes glands, tissue, cells, organs.

The main mechanisms of homeostatic are:

- **Blood sugar**
- **Body fluid composition**
- **Body temperature**
- **Blood pressure**

**THE BODY CONTROL THE CALCIUM LEVEL:-**

- The parathyroid hormone is secreted by parathyroid gland.
- The supply of the blood to parathyroid gland from thyroid arteries.
- The chief cells in parathyroid gland are the site of the principal of parathyroid hormone synthesis.

**REGULATION OF PARATHYROID HARMONE**

1. The secretion of parathyroid hormone respond to the small variations in plasma **Ca<sup>2+</sup>** with in seconds.
2. When **Ca<sup>2+</sup>** falls, cyclic adenosine monophosphate (**cAMP**) rise and parathyroid hormone secretes.
3. It stimulate **osteoclasts**, which breakdown bone to calcium release into the sternam of the blood.

END

**QUESTION: 2**

**Give clinical difference between hypothyroidism and hyperthyroidism.**

**ANSWER**

**CLINICAL DIFFERENCE  
BETWEEN  
HYPERTHYROID AND HYPOTHYROID**

**HYPERTHYROIDISM**

Hyperthyroidism is the excessive production of thyroid hormone. It occurs when the body makes too much of the thyroid hormones. Causes of hyperthyroidism are toxic goiter, thyrotoxicosis, and Grave disease. In hyperthyroidism, the patient's thyroid gland is increased from its normal size.

**HYPOTHYROIDISM:**

Hypothyroidism is the low production of thyroid hormone. It slows down the metabolism because of the slow production of thyroid hormone, which can lead to weight gain, as it is the opposite of hyperthyroidism.

**CLINICAL DIFFERENCES AMONG THEM :**

**HYPERTHYROIDISM**

- Too much iodine
- Grave disease.
- Thyroid replacement medication.
- Toxic nodular goiter

**HYPOTHYROIDISM**

1. not enough iodine
2. Hashimoto's disease.
3. Anti-thyroid medicines
4. Pituitary tumor

**SYMPTOMS :**

**HYPERTHYROIDISM:**

- weight loss
- Increased sweating
- Goiter (gravis)
- Heart beat fast
- Diarrhea
- Nervousness
- Muscles weakness

**HYPOTHYROIDISM:**

- weight gain
- lack of energy
- possible goiter (hashimoto's)
- extremely tired
- memory loss
- constipation, dryness of skin
- joint pain and heart pain

**TREATMENT:**

- Anti-thyroid medication
  - Beta blockers
- synthetic thyroid hormone

### **QUESTION:3**

#### **Classify enzymes and their function in digestion**

ANSWER

#### **ENZYMES IN DIGESTION:**

There are three main types of enzymes in digestion.

**LIPASES:** Distribute fatty acid off in oil and fats.

**PROTEASES:** Split the protein into amino acid and small peptide.

**AMYLASES:** Distribute carbohydrates as sugar and starch and converts in to a simple sugars like glucose.

#### **IMPORTANCE IN DIGESTION:**

In digestion the enzymes are very important because they act as catalyst which speed up an action for the break down of large molecules because these big molecules cannot pass from the gut wall into the blood. They change into smaller ones because these molecules can easily diffuse into the blood. Fats, protein, starch are big molecules, So lipase converts fats into the fatty acid. Enzymes are produced naturally in the body.

#### **EXAMPLE**

enzymes are required for proper digestive system function. Digestive enzymes are mostly produced in the pancreas, stomach, and small intestine. But even your salivary glands produce digestive enzymes to start breaking down food molecules while we still chewing.

#### **ROLE OF ENZYME IN DIGESTION SYSTEM**

- Amylase is produced in the salivary glands, pancreas, and small intestine. One type of amylase, called ptyalin, is made in the salivary glands and starts to act on starches while food is still in your mouth. It remains active even after you swallow.

- Protease is produced in the stomach, pancreas, and small intestine. Most of the chemical reactions occur in the stomach and small intestine. In the stomach, pepsin is the main digestive enzyme attacking proteins. Several other pancreatic enzymes go to work when protein molecules reach the small intestine.

- Lipase is produced in the pancreas and small intestine. A type of lipase is also found in breast milk to help a baby more easily digest fat molecules when nursing.

**END**