**Mid-Term Assignment**

**Course Title: Human Physiology Instructor: Dr Sara Naeem Total Marks: 30**

**ID:- 16019**

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

**Answer:-1)** The type of metabolism calcium and calcium homeostasis by which the body maintain of acceptable calcium level. The release of calcium from the bone is controlled by parathyroid hormone. Calcitonin stimulates incorporation of calcium in bone

**The Regulation of Calcium:-** Parathyroid hormone controlled in the blood level of calcium.

**Control of Calcium Level:-** It is that type of Calcium in which calcitonin is include in helping to control the level of calcium and phosphate the activity of parathyroid hormone in the blood that is opposing.

**Reduce Calcium Levelin Body:-** It slow down the action of osteoclasts, so they are responsible for breaking down bone.

**Recommendations of Parathyroid Hormone:-** It control the level of calcium in the blood when the hormones are too low by expending the levels largely, through this it’s activity on the kidneys, bones and intestine,,which stimulates the spread of calcium from large calcium stores into blood streams in bones

**Parathyroid Hormone Maintain Homeostasis:-**  The Parathyroid hormone contain blood calicum homeostasis

The parathyroid hormone increases the level of blood calcium when they drop too low. The calcitonin releases from the thyroid gland decreases the level of blood calcium when they become too high.

1. Give clinical differentiation between hypothyroidism and hyperthyroidism.

**Ans 2: Hypothyroidism:**

**.** Hypothyroidism leads to a decrease in hormones

**.** Hypothyroidism take place due to excessive production of thyroid hormone.

**.** It indicates sign of slow metabolism.

**.** Common disease is Hashimoto’s disease.

**.** It describes by increase weight despite a poor appetite.

**.** It characterize by cold intolerance.

**.** Thyroid Stimulating Hormone level will be elevated.

**.** Can be treated with Levothyroxine.

**B:-) Hyperthyroidism:-**

**.** Hyperthyroidism increase the hormone production.

**.** Hyperthyroidism take place due to less production of thyroid hormone.

**.** It indicates signs of high metabolism.

**.** Common causes Grave’s disease.

**.** It describes by loss of weight despite an increase appetite.

**.** Characterrize by heat intolerance.

**.** Thyroid Stimulating Hormone will be normal or reduce.

**.** It can be treated with radiotherapy or pharmaceutical agents or surgical removel of thyroid gland.

3)Classify enzymes and their function in digestion

**Answer 3:-**  Following are the classification of enzymes and their function in digestion.

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**Carbohydrase:-** Carbohydrase break down carbohydrate into smaller sugars

**Lipase:-** Lipase breaks fats into fatty acids and glycerol and splits fatty acid os fats and oils.

**Protease:-** protease breaks proteins into small peptides and amino acid.

**Amylase:**- Amylase breaks carbohydrates such as sugar and starch into simple sugar such as glucose.

**Bicarbonate and phosphate buffers :**- it neutralizes acids in rumen and maintain normal rumen pH.

**Role of enzyme in digestion:**-

Digestion can not be occurred without the presence of digestive enzyme. Enzyme is a protein that catalyze the chemical reaction in the body. Digestive enzyme increases chemical reaction due to which they breakdown large food molecules into smaller molecules.

**Function of digestive enzyme:-**

Amylase is produced in the mouth which function in breakdown of large starch molecules into smaller sugar molecules.

. Pepsin is produced in the stomoch.

. Trypsin is produced in the pancreas

. Pancreatic lipase is produced in the pancreas

. Ribonuclease is produced in the pancreas.

**Enzyme classification:-**

enzymes are divided into 6 functional class which is based on the type of reaction in which they are use to catalyze. They are the following

1: Oxidoreductases

2: hydrolases

3: transferases

4: lyases

5: isomerases

6: lygases