# NCERT Class 11- Biology: Chapter – 22 Chemical Coordination and Integration Part 3



**Question 3**:

What is erythropoiesis? Which hormone stimulate it?

**Answer**:

Formation of RBCs is called Erythropoiesis. Erythropoietin hormone is responsible for erythropoiesis which is a glycoprotein hormone secreted by the kidney. The secretion of erythropoietin and production of RBCs is stimulated when the amount of oxygen is lower than normal.

**Question 4**:

Name the only hormone secreted by pars intermedia of the pituitary gland.

**Answer**:

Pars intermedia secretes only one hormone called melanocyte stimulating hormone (MSH) . Anterior pituitary consist of two portions that is pars details and pars intermediate. Pars distalis secretes 6 hormones while pars intermedia secrete only one hormone called Melanocyte stimulating hormone.

**Question 5**:

Name the endocrine gland that produces calcitonin and mention the role played by this hormone.

**Answer**:

Thyroid gland is endocrine gland which produce calcitonin hormone which is a peptide hormone and secreted by Para follicular cells of the thyroid gland. This hormone decreases the plasma calcium concentration by decreasing the movement of calcium from bones.

**Question 6**:

Name the hormone that helps in cell - mediated immunity.

**Answer**:

Thymosin

It helps in maturation of T- cells and differentiation of T-cells. It retards the aging process and plays an important role in regulating the immune system by stimulating other kinds of immune cells as well and also responsible for growth during childhood.

**Question 7**:

What is the role of second messenger in the mechanism of protein hormone action?

**Answer**:

Secondary messenger like CAMP acts as intracellular hormone which deliver the information as intracellular to the target cells. It activates the appropriate cellular enzyme system where the specific hormone stimulated responses takes place.

**Question 8**:

State whether true or false:

a. Gastrointestinal tract, kidney and heart also produce hormones.

b. Pars distalis produces six trophic hormones.

c. B-lymphocytes provide cell-mediated immunity.

d. Insulin resistance results in a disease called diabetes mellitus.

**Answer**:

**a. True**

**Reason**:

Gastrointestinal tract- gastrin, secretin, cholecystokinin (CCK) and gastric inhibitory peptide.

Kidney- rennin, erythropoietin

Heart- atrial natriuretic factor.

**b. True**.

**Reason**:

1. Growth hormone

2. Prolactin

3. Thyroid stimulating hormone

4. Follicle stimulating hormone

5. Leuteinizing hormone

6. Adrenocorticotropic hormone

**c. False**

**Reason**:

T. lymphocytes provide cell mediated immunity and B- lymphocytes provide humoral immunity which is a type of adaptive immune system.

**d. True**

**Reason**:

Insulin is the hormone which is secreted by pancreas gland which control the amount of glucose in blood but in case of insulin resistance our body cells don't respond normally to insulin and glucose can't enter the cells and it build up in blood and leads to diabetes mellitus.

**Question 9**:

A patient complains of constant thirst, excessive passing of urine and low blood pressure. When the doctor checked the patients 'blood glucose and blood insulin level, the level were normal or slightly low. The doctor diagnosed the condition as diabetes insupidus. But he decided to measure one more hormone in patients' blood. Which hormone does the doctor intend to measure?

**Answer**:

Doctor intends to measure vasopressin hormone because this hormone increases the reabsorption of water by the kidney and deficiency of this hormone decreases reabsorption of water and thus leads formation of excessive urine which results in constant thirst and low blood pressure.