

NAME : FAWAD ALAM

ID : 14625

PAPER : CHEMICAL PATALOGY

T NAME : ADNAN AHMAD

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QNO 1

ANS : Thyroid gland :- it is the part of the endocrine system and is responsible for producing and releasing thyroid hormone into the bloodstream .

- Thyroid glands is located at the front of the neck just below the larynx .it is butterfly shaped and consist of two lobes left and right located either side of the windpipe (trachea)
 - The thyroid gland produces hormones that regulate the body metabolic rates as well as heart and digestive function muscles control brain development ,mood and bone maintenance .
 - The release of thyroid hormone is control by thyroid stimulating hormones .
 - Iodine is important for production .
 - Thyroid gland secretes three hormones (thyroxine ,triiodothyronine and calcitonin .
 - The thyroid gland primarily influence the metabolic rate
 - Calcitonin play a role in calcium in homeostasis .
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QNO 2

ANS :- HYPERTHYROSDISM :- it is the abnormal condition of thyroid gland in which the thyroid gland can produce more hormone than normal range which are harmful for the body

- Hyperthyroidism is most often caused by graves disease .
 - Graves disease :- AN autoimmune condition in which the thyroid is over stimulated ,causing hyperthyroidism .
 - Hypothyroidism :- is often accompanied by an enlargement of the thyroid known as goiter .
 - Goiter :- A general term for thyroid swelling .goiter can be harmless ,or can represent iodine deficiency or a condition associated with thyroid inflammation call Hashimoto 's thyroiditis .
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QNO 5

ANS :- SEX HORMONES :- The gonad is the organ that makes gameter.

- The gonad in males are testes .

- Females are ovaries
- Their products are the gametes (haploid germ cell n)
- e.g spermatozoon and egg cells..... Gametes
- n +n2n

Testosterone :- the production of testosterone by the testis is controlled by the pituitary gland .

- testosterone causes beard and body hair growth promotes the growth of prostate gland ,contributes to male sexually and causes bones and muscles growth .
- testosterone stimulate cell in the testes to produce sperm (make sex gamete germ cell).

Normal range :- normal range in male is about 2701070 ng per dl .

Estrogen :- estrogen is a steroid hormones that helps control and guide female sexual development .

- responsible for the development of female secondary sexual characteristics .
- development of breast widening of hips and growth of body hair .prepare the uterus for menstruation .

progesterone :- progesterone is a steroid hormone work in harmony with estrogen .

- it acts to prepare the uterus to receive the fertilized egg and maintain pregnancy
- secreted by the corpus luteum of the ovaries

corpus luteum :- structure that develops in an ovary after the egg has been discharged .

- so, the corpus luteum is the structure that remains after ovulation (release of egg).
- The structure produces progesterone for a few days after ovulation and then degenerates (NO fertilization ,NO pregnancy)
- If pregnancy occurs ,the corpus luteum remain and continues to produce progesterone .

QNO 4

ANS :- CALCIUM REGULATATION :- Blood calcium levels are regulated by parathyroid hormone (PTH) which is produced by the parathyroid gland .

- PTH is released in response to low blood calcium levels .it increase calcium levels by targeting the skeleton ,the kidneys , and the intestine .

OSTEOMALACIA :- is a diseases characterized by the softening of the bone caused by impaired bone metabolism primarily due to inadequate level of available phosphate,calcium ,and vitamin d, or because of resorption of calcium , the impairment of bone metabolism causes inadequate bone mineralization .

Symptom of osteomalacia :-

- Pain or tenderness in the bones .

- Muscles spasms and or cramps
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- Muscle weakness ,particularly in the thighs and buttocks
- Wadding gait and or difficulty walking .
- Felling of pins and needles ,known as paresthesia ,legs,in cases of calcium deficiency.

Causes :-

VITAMIN D DEFICIENCY :- people who live in areas where sunlight is limited ,get little exposure to sunlight or eat a diet low in vitamin d can develop osteomalacia ,vitamin d deficiency is the most common causes of osfteomallacia worldwide.

QNO 3

ANS :- ADRENOCORTICAL HORMONE :- this hormone are produced by the Adrenel cortex , the outer region of adrenal gland .these polycyclic steroid hormones have a variety of roles that are crucial for the body response to stress (for example ,the fight – or – flight response) and they also regulate other function in the body .threats to homeostasis ,such as injury ,chemical imbalances ,infection ,or psychological stress ,can initiate a stress response .

Classes

- 1) Mineralocorticoid :- hormones are synthesized in the outermost layer of the adrenal cortex known as zonaglomerulosa. Their function is to regulate the concentration of electrolytes circulating in the blood .for example aldosterone function to raise blood potassium level by targeting the kidneys.
- 2) The glucocorticoid :- the glucocorticoid family of hormones is synthesized in the middle layer of the adrenal cortex known as zonafasciculate .
- 3) Androgens :- androgens are synthesized in the innermost layer of the adrenal cortex known as zonateticularis .

END OF THE PAPER