



# QRA NATIONAL UNIVERSITY

## DEPARTMENT OF ALLIED HEALTH SCIENCES

Final -Term Examination (Spring-2020)

Course Title: chemical pathology (MLT 4th) Instructor: Mr adnan ahmad

Time: 6 hours

Marks 50

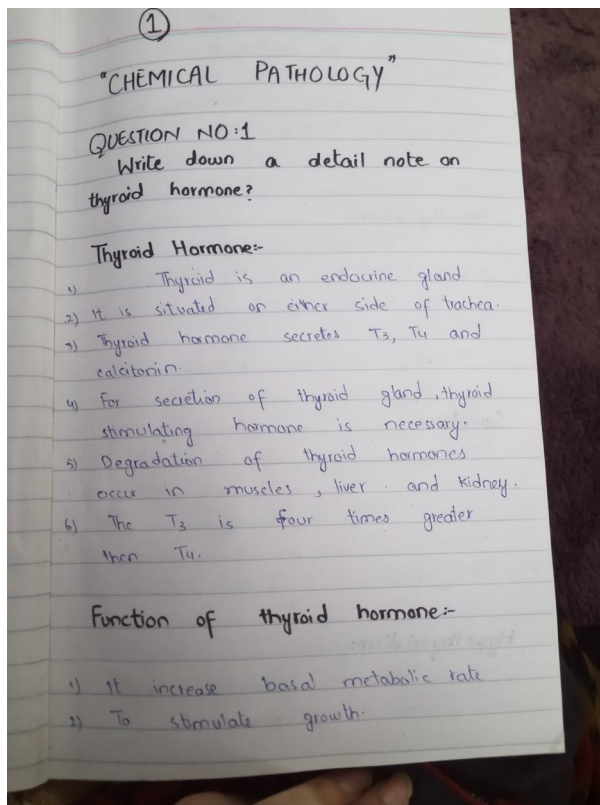
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**Note:**

- Attempt All(five) questions from this section, all questions carry equal marks.
- Use only Blue / Black Ink other than diagrams
- Answer Briefly and to the point, avoid un-necessary details
- Possession of Mobile Phones is strictly prohibited
- Every question must be attempted within one single page of two sided specified in answer book

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**Name: Haroon khattak ID#14627 MLT 4th semester**

**Q1: Write down a detail note on thyroid hormones.**



②

- Action on fat metabolism
- Action on carbohydrate metabolism.
- Action on protein metabolism
- Action on body weight.
- Action on cardiovascular system.

### Hyperthyroidism:-

The oversecretion of thyroid gland leads to hyperthyroidism.

It is caused by:

- 1) Graves' disease
- 2) Thyroid adenoma.

### Symptoms:-

- 1) Goiter
- 2) Increased sweating
- 3) Decreased body weight
- 4) Weakness
- 5) Polycythemia

### Hypothyroidism:-

The under secretion of thyroid gland leads to hypothyroidism.

③

- It leads to myxedema in adults and cretinism in children.

### Symptoms:-

- 1) Anemia
- 2) Fatigue
- 3) decreased cardiovascular function.
- 4) contraction of heart
- 5) Increase body weight
- 6) Depressed hair growth
- 7) scalliness of skin.

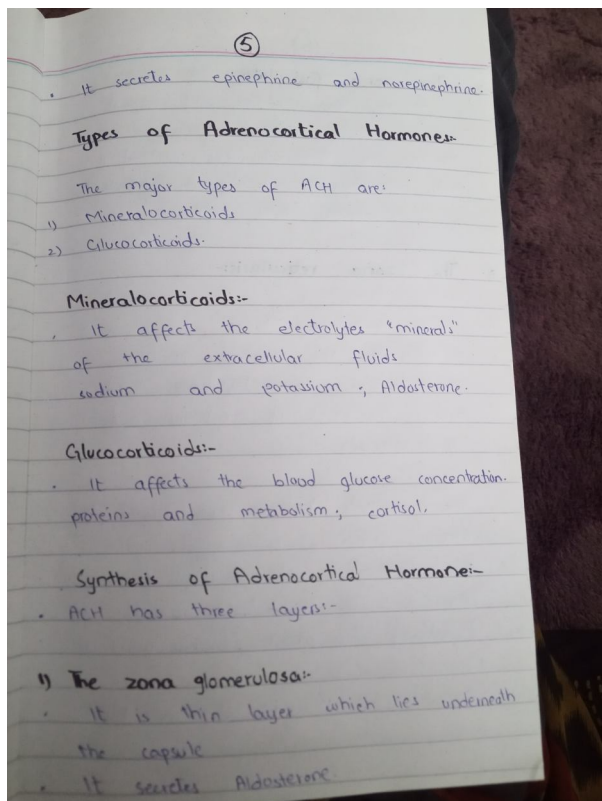
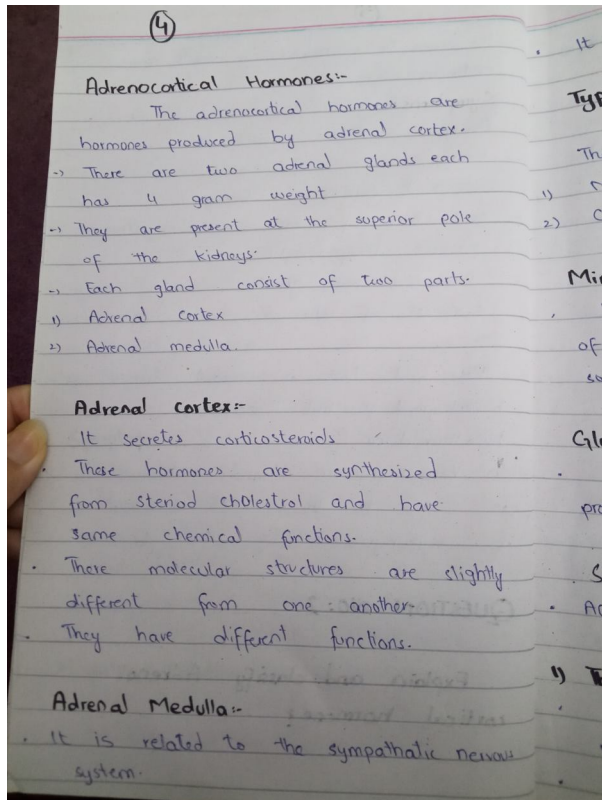
→ TRH and TSH is absent in hyperthyroidism but increase in hypothyroidism.

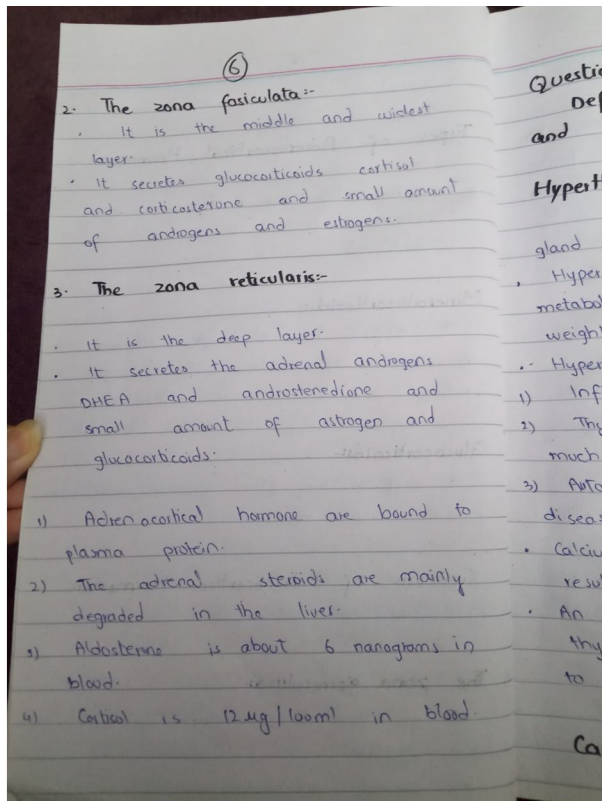
→ In hyperthyroidism basal metabolic rate is 30% to 60% but decreased in hypothyroidism by 20% to 40%.

### QUESTION NO: 2

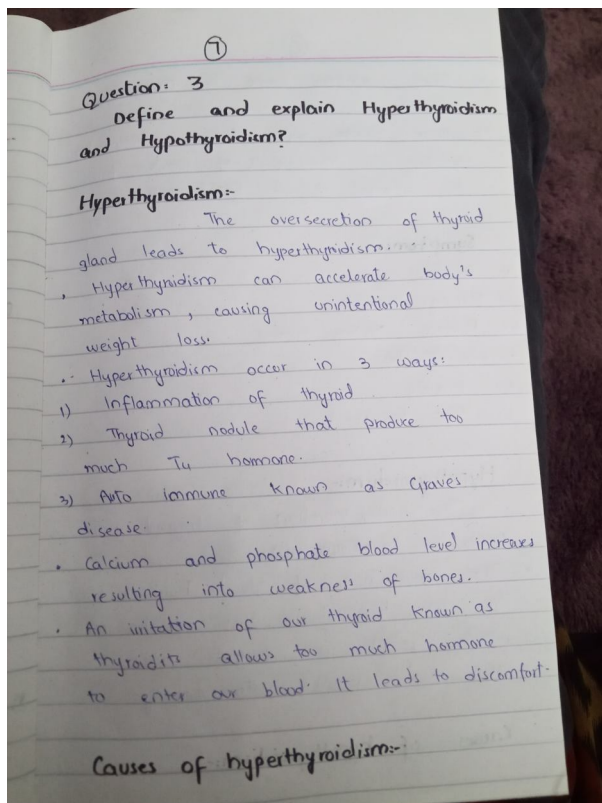
Explain and classify Adrenocortical hormone?

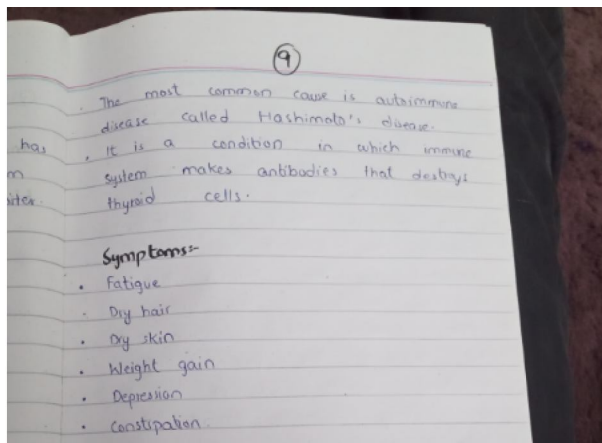
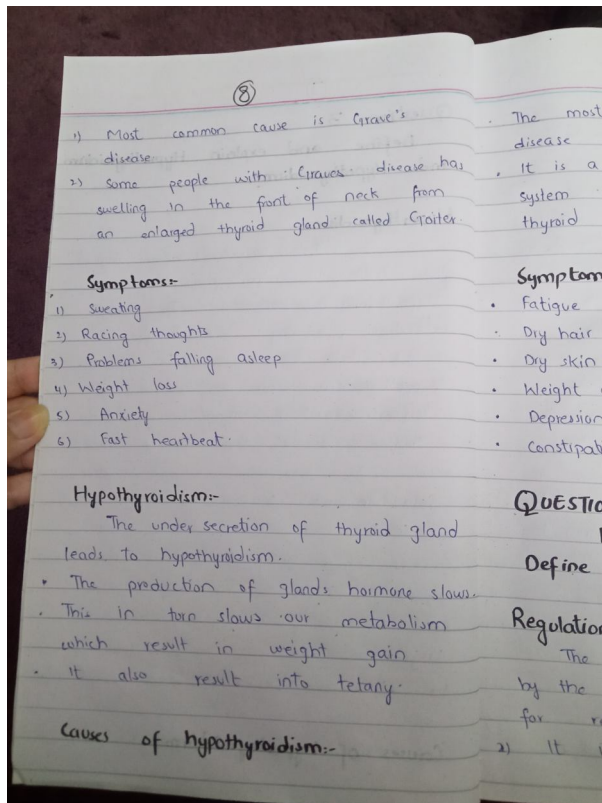
## Q2: Explain and classify Adrenocortical Hormone.



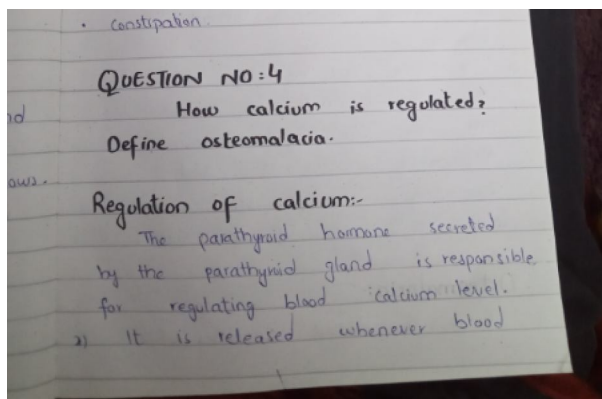


Q3: define and Explain Hyperthyroidism and hypothyroidism.





Q4: How calcium is regulated? Define Osteomalacia.





(10)

- calcium level is low:
- 1) PTH increases blood calcium level by stimulating osteoclasts, which break down bone to release calcium into the blood stream.
  - 2) PTH increases blood calcium levels by increasing the amount of calcium absorbed by the kidneys before it can be excreted in the urine.
  - 3) PTH increases blood calcium level by triggering the formation of calcitriol, which increases absorption of dietary calcium through the intestine.
  - 4) calcitonin, a hormone produced by the thyroid, acts in opposition to PTH by inhibiting osteoclasts, stimulating osteoclasts and increasing excretion of calcium into the urine by the kidney.

#### Osteomalacia:-

- 1) It is a disease characterised by

- softening
- 1) It is
  - 2) metabo
  - 3) The
  - 4) Osteo
- as
- #### Cause
- 1) The
  - 2) Less
- defici
- #### Symp
- 1) Bone
  - 2) Musc
  - 3) Diff
  - 4) Wea
  - 5) Eas
  - 6) B
  - 7) Pe

(11)

softening of bones:

- 1) It is caused by impaired bone metabolism.
- 2) The impairment of bone metabolism causes inadequate bone mineralization.
- 3) Osteomalacia in children is known as rickets.

#### Causes:-

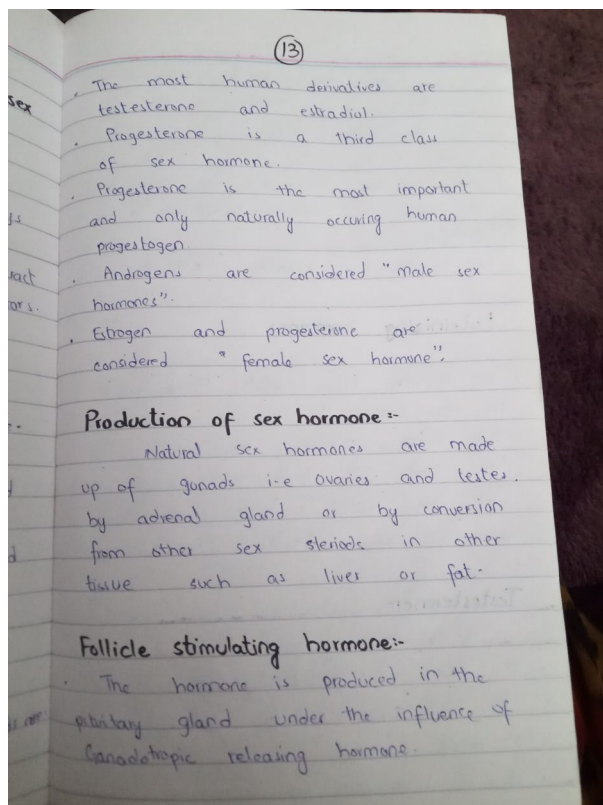
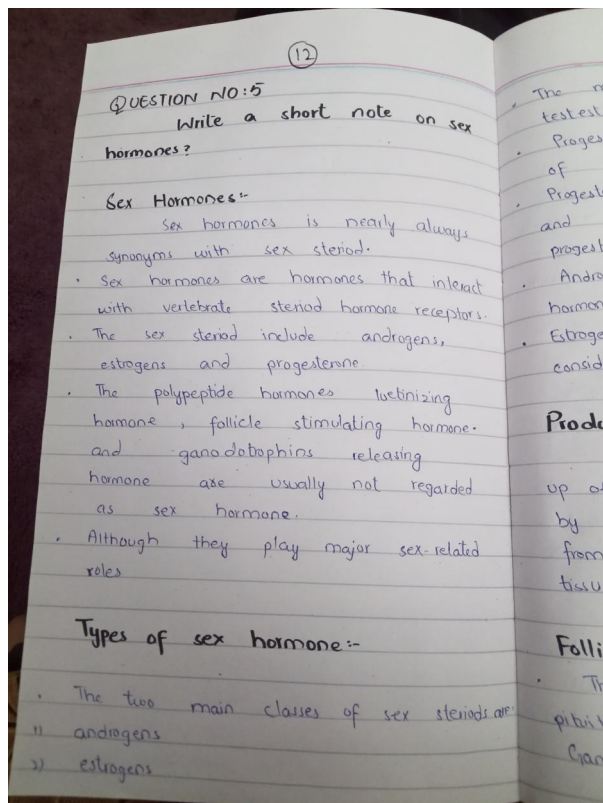
- 1) The most common cause of osteomalacia is a deficiency of vitamin D.
- 2) Less common cause is hereditary deficiencies of vitamin D.

#### Symptoms:-

- 1) Bone pain
- 2) Muscle weakness
- 3) Difficulty in walking
- 4) Weak bones
- 5) Easy fracturing
- 6) Bending of bones
- 7) Pelvic flattening.



Q5: Write a short note on sex hormones.



(14)

- It regulates the growth, pubertal maturation and reproductive processes of the human body.
- In both male and females, FSH stimulates the maturation of germ cells.
- In male FSH induces Sertoli cell to secrete inhibin.
- In females FSH initiates follicular growth.

#### Luteinizing hormone:-

- In females LH supports theca cells in the ovaries to provide androgens.
- LH surge triggers ovulation.
- In male LH act upon Leydig cells of the testes and responsible for production of testosterone an androgen.

#### Testosterone:-

- It is primarily produced in the testes.
- Its level is regulated by FSH and LH.
- It is responsible for gonadal development in male embryo.
- It is responsible for secondary sexual

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- characteristics in males.
- It also stimulates erythropoiesis.
- lack of testosterone leads to hypogonadism.

#### Progesterone:-

- A hormone involved in menstrual cycle, pregnancy and embryogenesis of human and other species.
- It is formed in corpus luteum, placenta, testes, adrenal cortex.
- It stimulates mammary glands.
- In large doses causes androgenic effects.
- During pregnancy decreases mother's auto immune response.
- Raises epidermal growth factor.