

- 1- Two testis → Produce spermatozoa.
- 2- Intratesticular and extratesticular ducts → carry sperms and seminal fluid.
- 3- Associated glands → form non cellular part of semen that nurtishes and provides a fluid vehicle for sperm delivery.

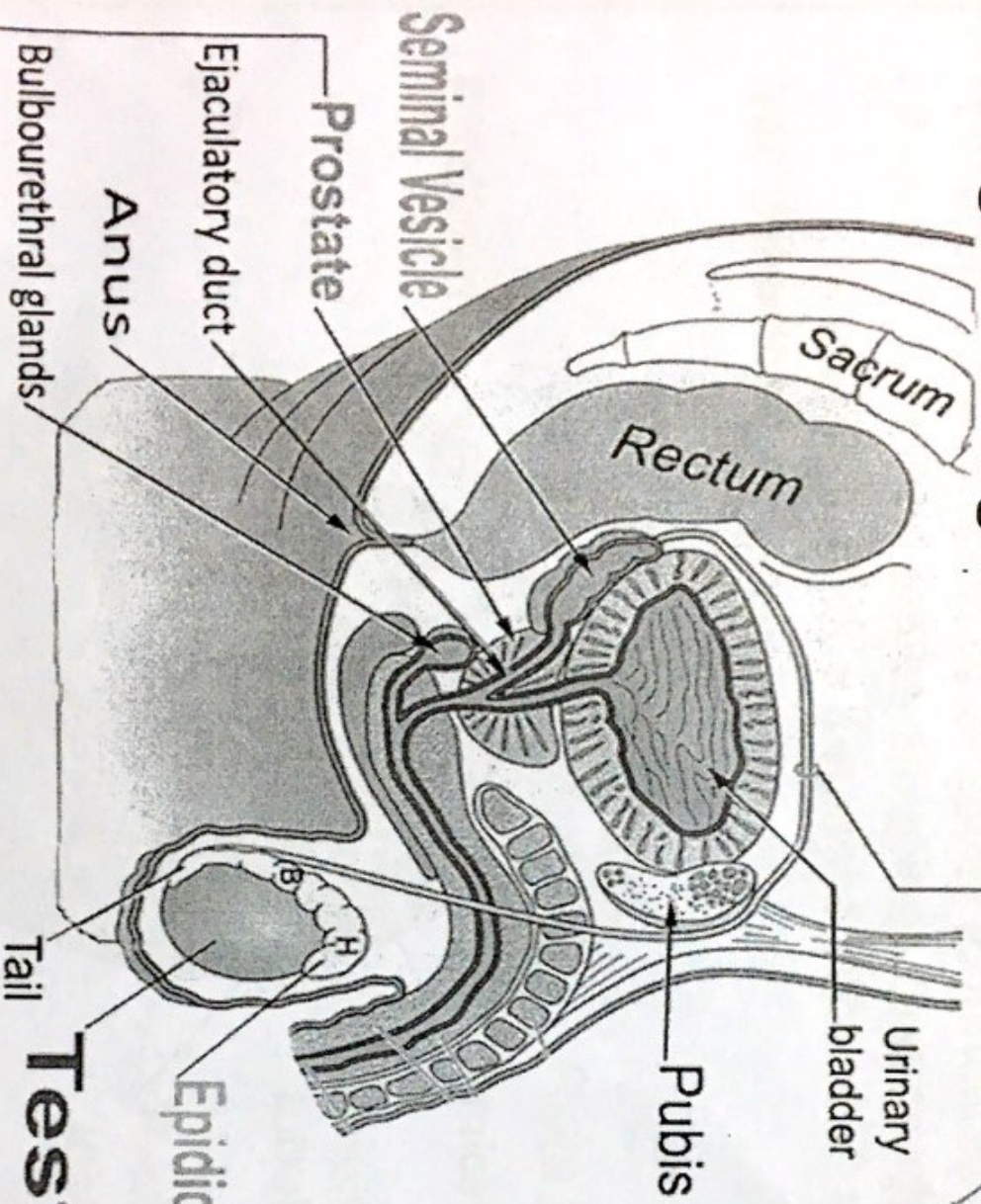
## Male genital organs

### Vas deferens

- Long muscular tube.
- About 45 cm long.
- Convey mature sperms from epidymis to ejaculatory duct

### Seminal Vesicle

- Two horn-shaped organs.
- On posterior surface of UB.
- Form of ~ 15cm coiled tube.
- Secretes Fructose-rich seminal fluid that constitutes ~70% of the ejaculate.



## Testis

- Highly convoluted tubule.
- About 6 meters in length.
- Divide into head, body, tail.
- Storing and Maturing sperms.

### Epididymis

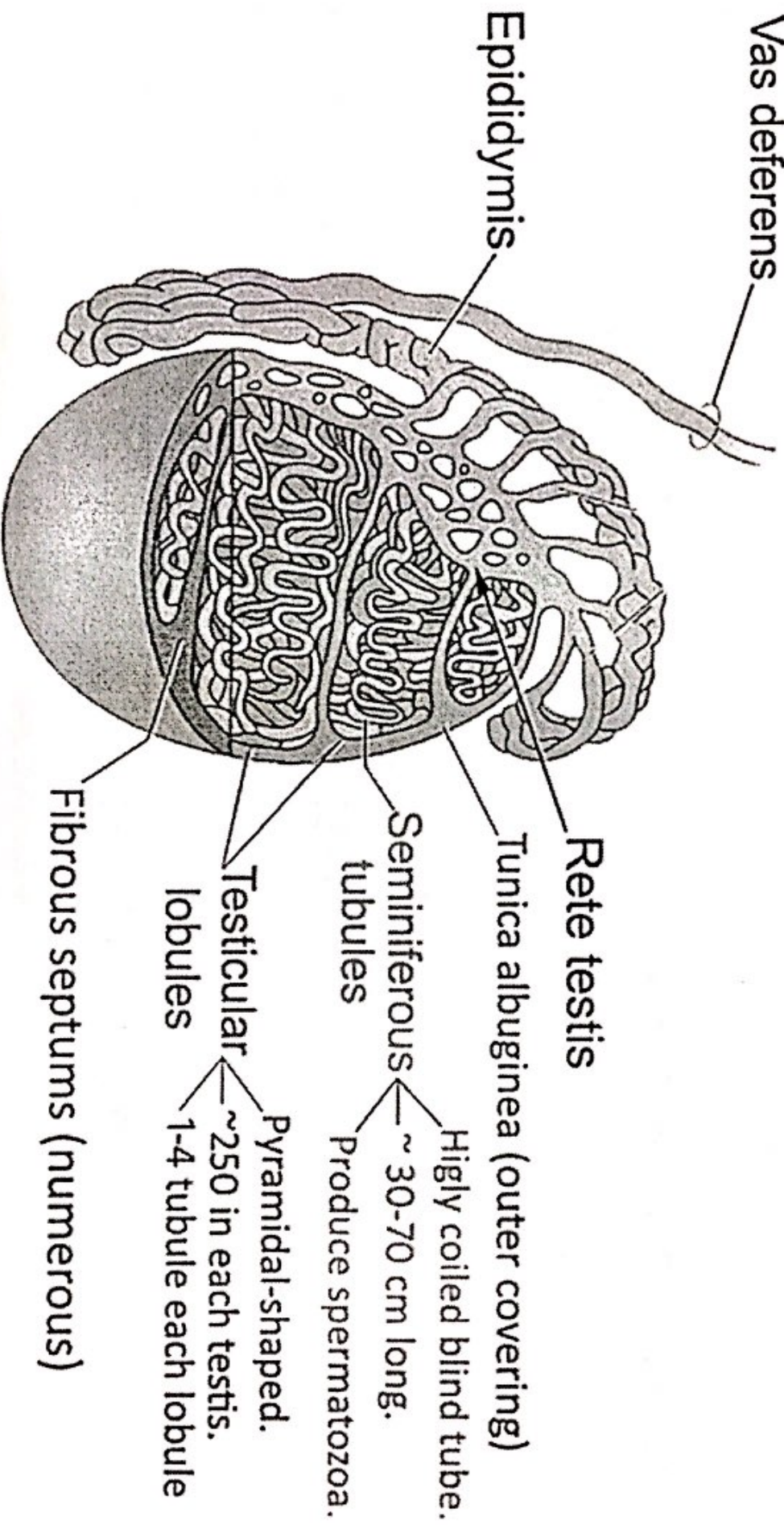
- Pyramidal-shaped fibromuscular glandular organ.
- Form of 5 lobes. Surrounds prostatic urethra.
- Secretes alkaline fluid to neutralize ± acidic vaginal secretion

## Prostate

- Pyramidal-shaped fibromuscular glandular organ.
- Form of 5 lobes. Surrounds prostatic urethra.
- Secretes alkaline fluid to neutralize ± acidic vaginal secretion

# Testis

- Paired organs dedicated to produce haploid (1n) sperms and Testosterone.
- Located outside abdominal cavity to function.
- **Parts:** Covered by tunica albuginea that sends many fibrous septums to divide the testis into ~ 250 testicular lobules.
- Vas deferens



# Testis

- Mobile organ within the scrotum.
- Enclosed by a tough fibrous capsule, the tunica albuginea.
- Doesn't function at body temperature but about 3° lower than abdominal temperature.
- Functions:
  - Produce sperms (In male germ cells → male Gametes).
  - Secretes Testosterone hormone.

## Epididymis

- Located posterior to the testis.
- Parts: head, body, and tail.
- About 6 meters coiled tube.
- Function: Mature and store of sperms.

# Vas Deferens

- About 45 cm long thick-walled tube.
- Carry mature sperm from tail of epididymis to ejaculatory duct.

# Seminal Vesicles

- Lies on posterior surface of the urinary bladder.
- About 15 cm coiled tube.
- Produce **Fructose** to the seminal fluid, the source of energy and motion of spermatozoa.?

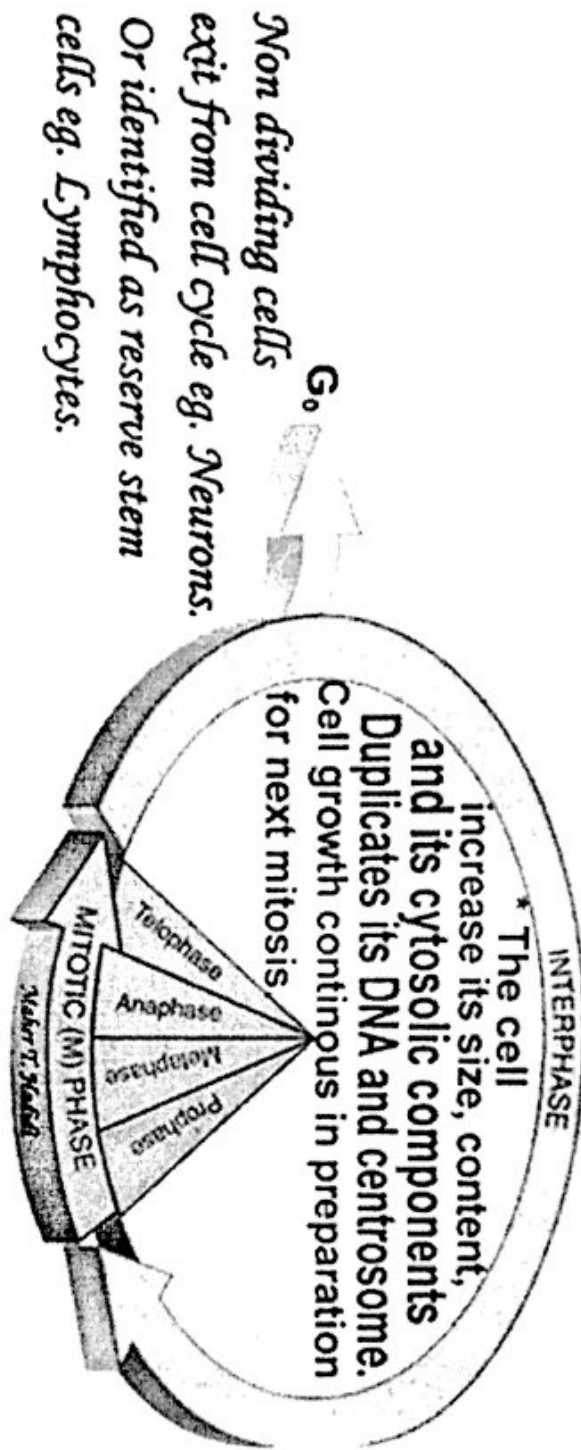
# Prostate

- Chestnut-shaped organ has a base and an apex.
- Produce alkaline secretion that helps neutralize ± the acidity in the vagina.?

A series of events within the cell that prepare the cell for dividing into two identical daughter cells.

\* Consists of two major events:

1. Mitosis → During which the cell divides its nucleus and its cytoplasm to give two identical daughter cells.
2. Interphase → The time between mitotic events. Is a period of cell growth and other events preparing the cell for the next mitosis.



# Cell Cycle

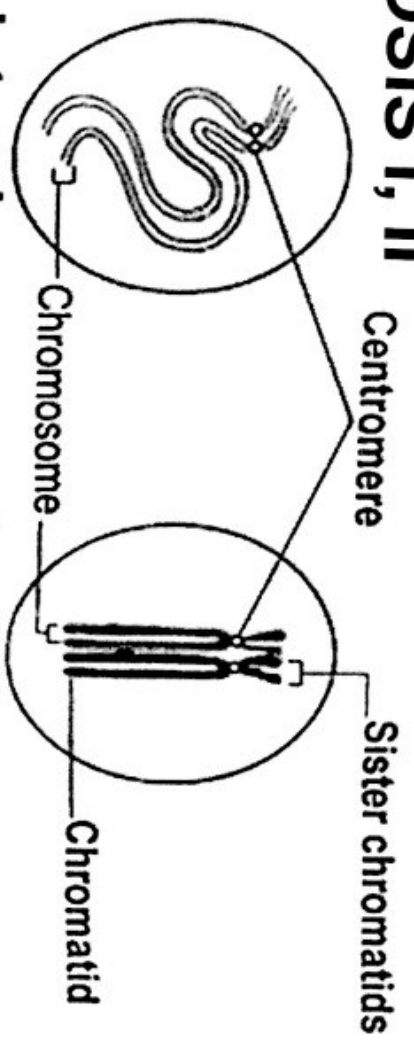
■ This cyclic process is important for growing, renewing of cell population and allows wounds repair.

G<sub>0</sub> These may be induced to reenter the cell cycle in response to injury. Their activation may occur in wound healing and in the repopulation of seminiferous epithelium after exposure to radiation.

# Chromosomes

- Chromosomes normally exists in pairs, 23 **homologous** pairs to form the **2n diploid** cells. Normal somatic human cell have 22 pairs of **autosomes** + one pair of **sex\_chromosomes** = **46** chromosomes.
- The pair of sex chromosome is **XX in female** and **XY in male**.
- One chromosome of each pair is maternal, and one is paternal in origin.
- Gametes contains 23 single chromosomes (**1n**) **haploid** number to restores the (**2n**) **diploid** number in fertilization.
- *In meiosis,*

# MEIOSIS I, II



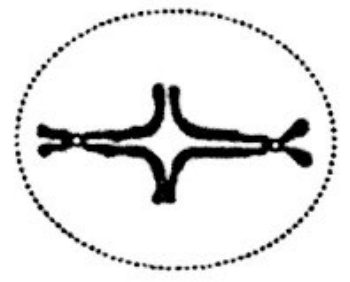
## Interphase Pairing

- Chromosomes replicate their DNA so that each of the 46 chromosomes is duplicated into 2 sister chromatids.
- Homologous chromosomes align themselves in pairs.
- Condensation of chromosome.



## Crossover

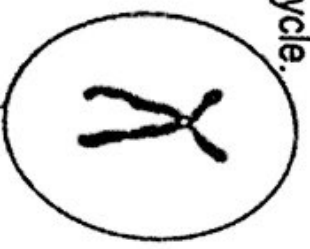
- Interchange of chromatid segments (genes) between non-sister chromatids to form an X-like structure (chiasma).
- Pulling apart of doubled-structured chromosomes



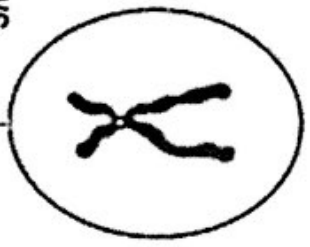
## Anaphase of 1st meiotic division

**NOTE:** In meiosis, DNA replication and centromeric division occur in separate cell cycles, while in mitosis both occur during the same cell cycle.

Cells contain 23 double-structure chromosomes



Double-structure chromosome split at centromere and allows the 2 chromatids to separate as independent chromosome.



Cells resulting from 1st meiotic division

Cells contain 23 single chromosomes



the 2 chromatids to separate as independent chromosome.



Cells resulting from 2nd meiotic division