REPRODUCTIVE SYSTEM

- Rabbit is a unisexual animal and exhibits sexual dimorphism.

MALE REPRODUCTIVE SYSTEM :

- Male reproductive system of rabbit consists of a pair each of testes, epdidymes, vasa deferentia, a urethra and a penis.

1. Testis

- Rabbit has a pair of oval, pinkish testes. They lie outside the abdominal cavity, in special sacs called **scrotal sacs**. Scrotal sacs are covered by hairy skin.
- In embryonic stage, testes lie in the abdominal cavity near the kidneys.
- They descend into scrotal sacs before birth through inguinal canals (The cavities of scrotal sacs are connected to the abdominal cavity through **inguinal canals**).
- Testes are kept in their original position by **spermatic cords**. A spermatic cord consists of an artery, a vein and a nerve which are embedded in connective tissue.
- Testis is covered by a connective tissue coat, known as **tunica albuginea**. Outside the tunica albuginea, is **tunica vaginalis** which is formed by two layers. Paietal layer lines the scrotum and visceral layer lines the tunica albuginea.
- Around the testis, between the two layers of tunica vaginalis, is a narrow coelomic cavity filled with coelomic fluid. It allows sliding movements of testis.
- Tunica albuginea projects inwards as **septa** and divides the testis into many lobules.
- These lobules contain long, convoluted **seminiferous tubules**. They are lined by the **germinal epithelium**.
- There is connective tissue among seminiferous tubules which contains blood capillaries and nerves.
- Germinal epithelial cells produce sperms by a process called **spermatogenesis.**
- Among the germinal epithelal cells, there are **sertoli cells** which nourish the developing sperms. They produce INHIBIN which inhibit the production of FSH

- Connective tissue among seminiferous tubules contain **Leydig cells (= interstital cells).**
- They secrete **testesterone** (male sex harmone) which controls secondary sexual characters.
- All the seminiferous tubules of a testis open into a network called **rete testis.**
- It opens into many fine ductules, known as **vasa efferentia.** These vasa efferentia open into **epididymis.**

2. Epididymis

- Epididymis is a long, narrow and highly convoluted tubule. It is present along the inner surface of the testis. Epididymis has three distinct parts.

a) Caput epididymis :

- It is the anterior part of epididymis. It is connected to testis through vasa efferentia.
- Caput epididymis is also connected to the dorsal abdominal wall by a spermatic cord.

b) Corpus epididymis :

- It is the middle part of the epididymis, connecting caput epididymis and cauda epididymis.

c) Cauda epididymis:

- It is the posterior part of the epididymis. The cauda epididymis is joined to scrotal sac by a short, thick, elastic cord known as gubernaculum.
- Epididymis stores the sperms temporarily and nourishes them.

3. Vasa deferentia

- Cauda epididymis leads into a long, muscular tube called **vas deferens**. It extends forward along the inner side of the scrotal sac.
- Vasa deferentia of both sides pass through their respective inguinal canals, enter the abdominal cavity, curve round the ureters and extend backwards to open into the seminal vesicle.

4. Urethra

- The neck of urinary bladder and seminal vesicle posteriorly open into **urethra** or urinogenital canal. Urethra is straight, muscular duct.
- From the neck of urethra, a dorsal diverticulum is formed called uterus masculinus. Urethra opens at the tip of the penis through a male urino- genital aperture.
- Urethra is the common passage for urine and semen.

5. Penis

- Penis is the copulatory organ. It is a cylindrical, erectile organ hanging from the ventral wall of abdomen in front of anus.

- Penis is covered by a loose sheath of skin. The skin hangs over the tip of penis is known as **prepuce**. The tip of penis covered by prepuce is called **glans penis**.
- Penis is composed of three longitudinal columns, namely, two columns of **corpora cavernosa** (upper) and one column of **corpus spongiosum** (lower) made by spongy tissue.
- In the middle of corpus spongiosum, urethra is present. When the rabbit is sexually excited, the blood spaces of penis are filled with blood and make the penis stiff and enlarged.
- Penis transfers the sperms into the vagina of female during sexual intercourse,

6. Accessory glands

- Associated with the male reproductive system of rabbit, there are certain glands.
- Their secretions along with that of epididymes and uterus masculinus forms the seminal fluid **(=semen).**
- **Seminal vesicle secretes most of the semen.** Seminal fluid contains fructose and prostaglandins

a) Prostate gland

- Around the base of uterus masculinus, there is a large prostate gland. It opens into the urethra through many ducts.
- It secretes an alkaline fluid which activates the sperms. It also contributes to main bulk of semen. it secretes citric acid that enters kreb's cycle to produce ATP

b) Cowper's glands

- Posterior to the prostate gland, there is a pair of cowper's glands (bulbo-urethral glands). Their secretions neutralise the urinary residue and vaginal acidity.

c) Perineal glands

- Behind the Cowper's glands, there are two perineal glands. They open into hairless perineal depressions, one on either side of anus. Their secretions give characteristic smell to rabbit.

d) Rectal glands

- Two large rectal glands are situated at the sides of rectum. Their function is not yet known.