**Male Reproductive System**

**Adolescence** Puberty Burst of hormones activate maturation of the gonads: \_\_\_\_\_\_\_\_\_\_\_\_

Begins: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ yrs of age

 **General Physical Changes** Enlargement of the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ genitalia

Voice \_\_\_\_\_\_\_ Hair growth Mental \_\_\_\_\_\_\_\_\_\_\_

Changes in skin Sebaceous gland secretions thicken/increase 🡪 \_\_\_\_\_\_\_

**External Genitalia** Gonads = testes undescended by birth= \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Scrotum Penis

**Testes** Each testis is an oval structure about \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ long and \_\_\_\_\_\_\_\_\_in diameter

Located in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

There are about \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ lobules in each testis. Each contains 1 to 4 -seminiferous tubules

Interstitial cells produce \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, are located between the seminiferous tubules within a lobule.

**Scrotum** consists of skin and subcutaneous tissue

 A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ , of subcutaneous tissue in the center divides it into two parts, each containing one testis.

Smooth muscle fibers called in the subcutaneous tissue contract to give the scrotum its \_\_\_\_\_\_\_\_\_\_\_\_ appearance. When these fibers are relaxed, the scrotum is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

consists of skeletal muscle fibers and controls the position of the scrotum and testes. When it is \_\_\_\_\_\_\_\_\_\_\_\_\_\_ or a man is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, this muscle contracts to pull the testes closer to the body for warmth.

**Epididymis =** a long tube (about \_\_\_\_\_\_ meters) located along the superior and posterior margins of the testes.

Sperm that leave the testes are \_\_\_\_\_\_\_\_\_\_\_\_\_\_ and incapable of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. They complete their maturation process and become fertile as they move through the epididymis. Mature sperm are stored in the lower portion, or tail, of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Duct System** Sperm cells pass through a series of ducts to reach the outside of the body. After they leave the testes, the sperm passes through the epididymis, ductus deferens, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, and urethra.

**Ductus Deferens** = [vas deferens] a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that is continuous with the epididymis.

enters the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_cavity through the inguinal canal and passes along the lateral pelvic wall, behind bladder & toward the prostate gland.

Sperm are stored in the proximal portion of the ductus deferens, near the epididymis

**Ejaculatory Duct** Each ejaculatory duct passes through the prostate gland and empties into the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Urethra** extends from the urinary bladder to the external urethral orifice at the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

It is a passageway for sperm and fluids from the reproductive system and urine from the urinary system.

**accessory glands** are the seminal vesicles, \_\_\_\_\_\_\_\_\_ gland, and the bulbourethral glands. These glands secrete fluids that enter the urethra.

**Seminal Vesicles** glands \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to the urinary bladder.

The fluid is viscous and contains \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, prostaglandins and proteins.

**Prostate** a firm, dense structure about the size of a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that is located just inferior to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The secretions of the prostate are thin, \_\_\_\_\_\_\_\_\_\_\_\_ colored, and \_\_\_\_\_\_\_. They function to enhance the \_\_\_\_\_\_\_\_\_\_\_ of the sperm.

**Bulbourethral Glands (Cowper's)** small, about the size of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and located near the base of the penis. A short duct from each enters the proximal end of the penile urethra.

In response to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, the bulbourethral glands secrete an alkaline mucus-like fluid

**Seminal Fluid or Semen** a slightly alkaline mixture of sperm cells and secretions from the accessory glands.

Secretions from the seminal vesicles make up about \_\_\_\_\_\_\_\_\_\_\_ of the volume of the semen, with most of the remainder coming from the prostate gland. The sperm and secretions from the bulbourethral gland contribute only a small volume.

The volume of semen in a single ejaculation may vary from \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ There are between \_\_\_\_\_\_\_\_\_\_\_\_\_ million sperm per milliliter of semen. Sperm counts below \_\_\_\_\_\_\_\_\_\_\_\_\_\_ per milliliter usually present fertility problems.

**Penis** is a cylindrical organ located \_\_\_\_\_\_\_\_\_\_\_\_\_\_ to the scrotum and functions to transfer sperm to the vagina.

consists of three columns of erectile tissue that are wrapped in connective tissue and covered with skin.

3 parts: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The urethra, which extends throughout the length of the penis opens through the external urethral orifice at the tip of the glans penis. A loose fold of skin, called the prepuce, or foreskin, covers the glans penis.

**Erection** Involves increase in \_\_\_\_\_\_\_\_\_\_\_\_\_\_ , width & \_\_\_\_\_\_\_\_\_\_\_\_\_

Changes in blood supply: arterioles \_\_\_\_\_\_\_\_\_\_\_\_\_\_ veins constrict

The spongy erectile tissue fills with blood. Erectile Dysfunction [ED] also known as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Hormones** Follicle-stimulating hormone (FSH) stimulates \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Interstitial Cell Stimulating Hormone (ICSH) stimulates the production of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

testosterone stimulates the development of male \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_haracteristics & spermatogenesis.

**Spermatogenesis** Sperm are produced within the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Early in embryonic development, primordial germ cells enter the testes and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ into spermatogoniaSpermatogonia are \_\_\_\_\_\_\_\_ cells, each with 46 chromosomes (23 pairs) located around the periphery of the seminiferous tubules. At puberty, hormones stimulate these cells to begin dividing by \_\_\_\_\_\_\_\_\_\_\_\_\_\_ Some remain at the periphery as spermatogonia. Others become primary spermatocytes. Because they are produced by mitosis, primary spermatocytes, like spermatogonia, are diploid and have 46 chromosomes. Each primary spermatocytes goes through the first meiotic division, meiosis I, to produce two secondary spermatocytes, each with 23 chromosomes (haploid). Just prior to this division, the genetic material is replicated During meiosis I, one chromosome, goes to each \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ spermatocyte. In the second meiotic division, meiosis II, each secondary spermatocyte divides to produce two spermatids. There is no replication of genetic material in this division, but a single-stranded chromatid goes to each cell. As a result of the two meiotic divisions, each primary spermatocyte produces four spermatids. Each spermatid has \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (haploid), one from each pair in the original primary spermatocyte. The final step in the development the spermatids formed from spermatogenesis become mature \_\_\_\_\_\_\_\_\_\_\_\_\_ or sperm. The mature sperm cell has a head, midpiece, and tail. The head, also called the nuclear region, contains the 23 chromosomes surrounded by a nuclear membrane. The tip of the head is covered by an acrosome, which contains \_\_\_\_\_\_\_\_\_\_that help the sperm penetrate the female gamete. The midpiece, metabolic region, contains \_\_\_\_\_\_\_\_\_ that provide adenosine triphosphate (\_\_\_\_\_\_). The tail, locomotor region, uses a typical \_\_\_\_\_\_\_\_\_\_\_\_ for locomotion. The sperm are released into the lumen of the seminiferous tubule and leave the testes. They then enter the epididymis where they undergo their final maturation and become capable of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Sperm production begins at puberty and continues throughout the life of a male. The entire process, beginning with a primary spermatocyte, takes about \_\_\_\_\_\_\_ days. After ejaculation, the sperm can live for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.