

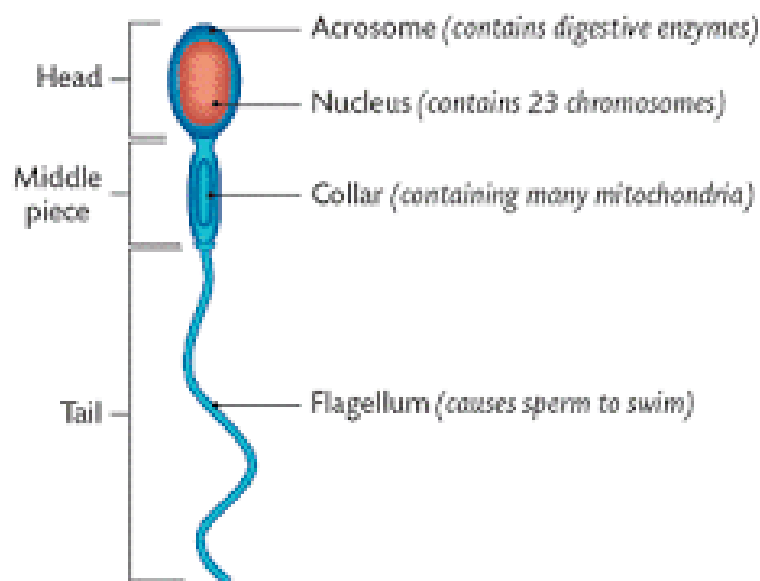


8. Define spermiogenesis and spermiation.

Ans: Spermiogenesis is the process of transformation of spermatids into mature flagellated spermatozoa (sperms). Spermiation is the process of release of mature spermatozoa. In this spermatozoa are shed into the lumen of seminiferous tubule for transport.

9. Draw a labelled diagram of sperm.

Ans:



10. What are the major components of seminal plasma?

Ans: Seminal plasma is the fluid in which sperm is ejaculated. Major components of seminal plasma are secretions from seminal vesicles, prostate and bulbourethral gland and sperms from testis. It is rich in fructose and contains enzymes, citric acid, hormones like prostaglandins, calcium and clotting proteins.

11. What are the major functions of male accessory ducts and glands?

Ans: Major functions of male-accessory ducts are

- Aid in sperm transport.
- Temporary storage of spermatozoa.

Male accessory glands secretions constitute the seminal plasma. These secretions are rich in fructose, ascorbic acid, citrate, calcium, certain enzymes and prostaglandins. These secretions nourish and activate the spermatozoa to swim.

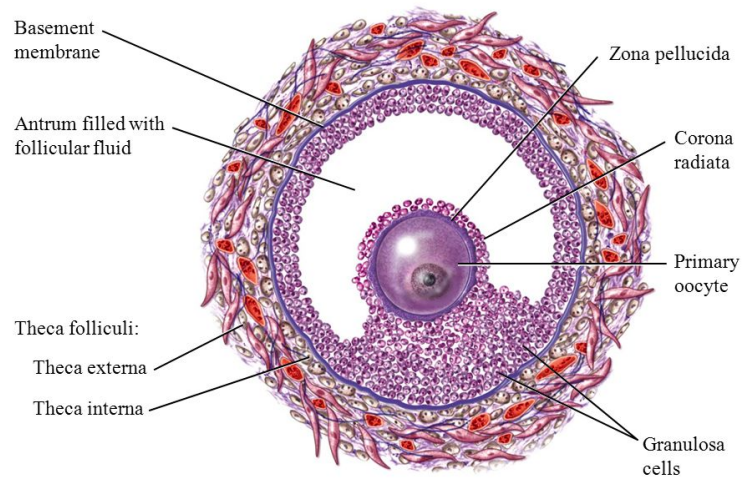
12. What is oogenesis? Give a brief account of oogenesis.

Ans: The process of formation of a mature female gamete (ovum) is called oogenesis. It occurs in the ovaries of female reproductive system. Oogenesis is a discontinuous process it begins before birth, stops in midprocess & only resumes after menarch. It occurs in three phases : Multiplicative phase (formation of oogonia mitotically from the primary germ cells), Growth phase (growth of oogonia into primary oocyte) & Maturation phase (formation of mature ova

The diagram illustrates the process of oogenesis. It begins with **Primordial germ cells**, which develop into an **Oogonium (diploid)**. The Oogonium then becomes a **Primary oocyte (in prophase of meiosis I)**. The Primary oocyte enters a **Resting state**. Following the **First meiotic division**, the cell divides into a **Secondary oocyte** and a **First polar body**. The Secondary oocyte then undergoes the **Second meiotic division (stimulated by fertilization)**, resulting in an **Ootid (haploid)** and a **Second polar body**. Finally, the Ootid matures into an **Ovum (haploid)**.

The diagram illustrates the internal anatomy of the ovary, showing the progression of follicular development from primordial follicles to the corpus luteum. Key structures labeled include:

- Outer layers:** Ovarian surface epithelium, Tunica albuginea, and Cortex.
- Follicular stages:** Primordial follicles, Primary follicles, Secondary follicle, Antral follicle, Pre-ovulatory follicle, and the Ovulated oocyte surrounded by the Corona radiata.
- Internal structures:** The corpus luteum (developing and degenerating), the medulla, and the mesovarium containing blood vessels.
- Follicle components:** Granulosa cells, Antrum, Oocyte, Zona pellucida, and Theca cells.



(d) Mature (graafian) follicle

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