Topic — Gametogenesis → Spermatogenesis
→ Oogenesis

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:Gametogenesis:⇒

→ The process in which cells undergo meiosis to form gametes.

Or

→ Gametogenesis is the process where by a haploid cell(n) is formed from a diploid cells(2n) through Meiosis and cell differentiation.
→ Gametogenesis in the male is known as spermato-genesis and produces Spermatozoa while Gametogenesis in the female is known as Oogenesis and produces Ova.

Spermatogenesis :⇒

→ formation of the spermatozoa within the seminiferous tubule is called Spermatogenesis.
→ Immature germ cells, called Spermatogonia present in Seminiferous tubule divided by mitosis.
→ some of these cells enter Meiosis I to become primary Spermatocytes. They then complete Meiosis I to become Secondary spermatocytes.
→ The secondary spermatocytes then complete Meiosis II to become Spermatids which differentiate into spermatozoa (sperms) and are released into the

duction of the tubule.

→ Within the seminiferous tubule, interspersed with spermatogonia, there are large cells that extend from the periphery of the tubule to the lumen. These large cells are the Sertoli cells which support and nourish other cells

→ Spermatogenesis also depends on testosterone secreted by Leydig cells located between seminiferous tubules.

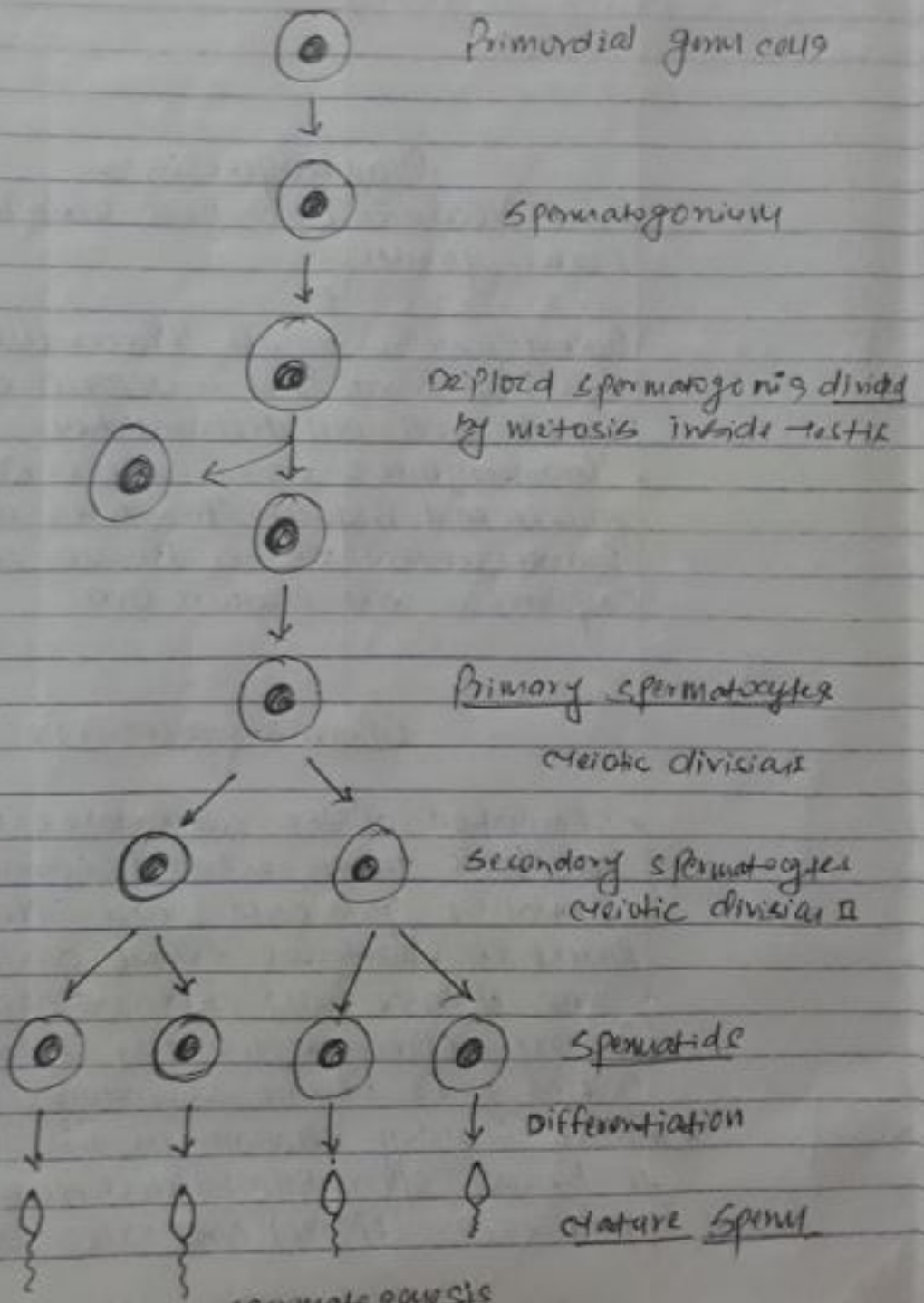

Fig: Spermatogenesis

Oogenesis :-

→ The formation of female gamete (egg) in the ovaries is termed oogenesis.

→ Oogenesis begins in female before they are even born.

→ During early fetal development, Primordial (Primitive) germ cells migrate from the yolk sac to the ovaries. These germ cells differentiate within the ovary into oogonia.

→ After several mitotic divisions, oogonia undergo meiosis and developed into primary oocyte.

→ Primary oocyte remains arrested after diplotene of prophase I until the female becomes sexually mature.

→ At this point a small number of primary oocytes periodically mature, under the influence of hormone, completing meiosis I to produce secondary oocyte and first polar body.

→ The secondary oocyte maturation is arrested at metaphase II and completes meiosis II only after fertilization.

→ Secondary oocyte eventually undergoes meiosis II to produce mature eggs (ova) and second polar bodies.

→ All of the polar bodies eventually degenerate.

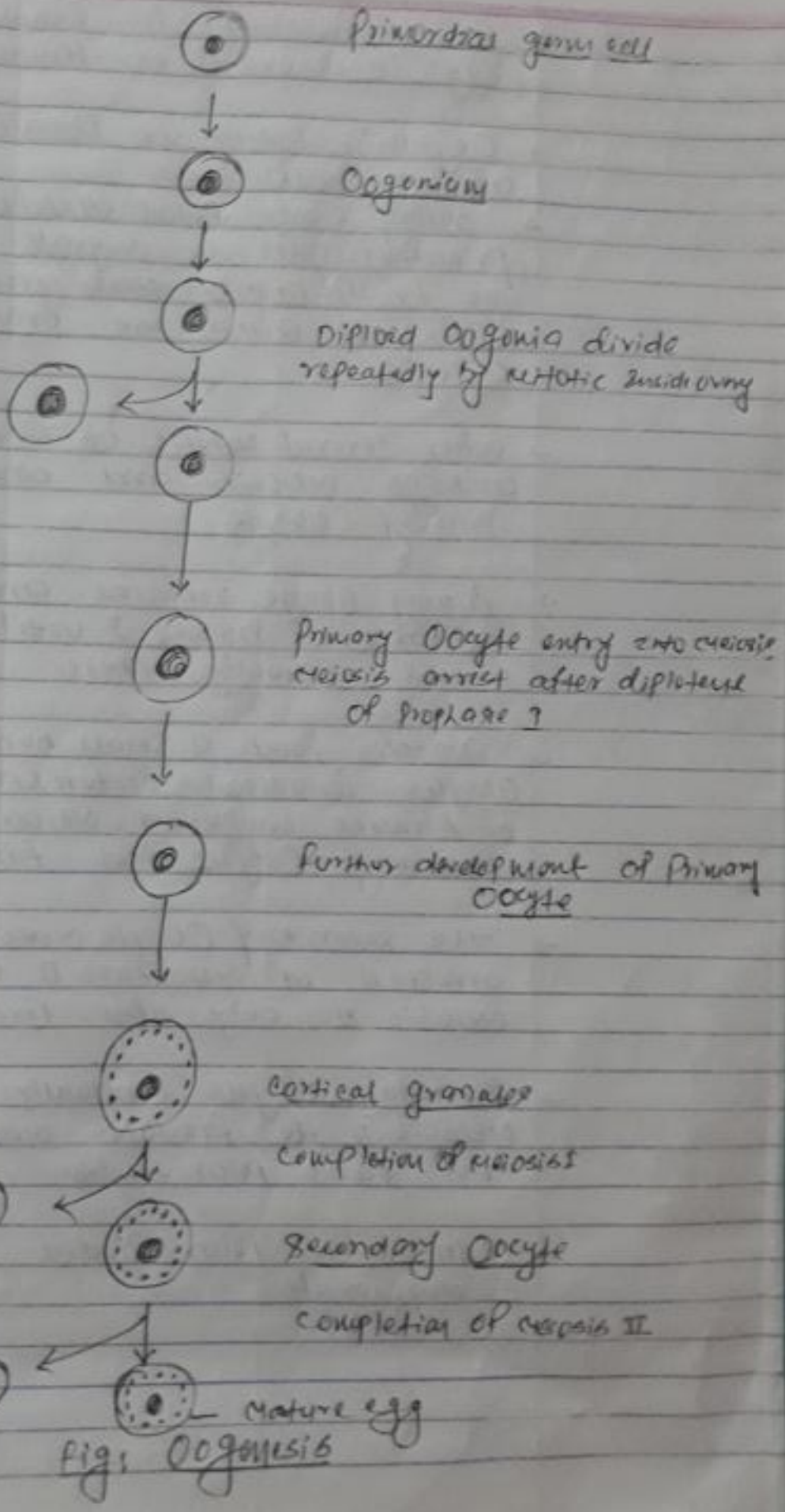

Fig: Oogenesis

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