

SEM IV ZOOA

CC8 UNIT 5: URINOGENITAL SYSTEM (Part - 5)

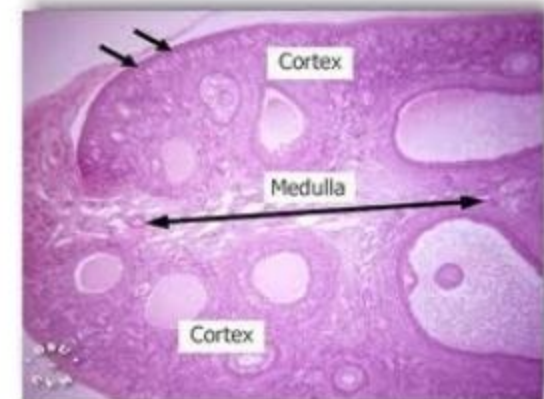
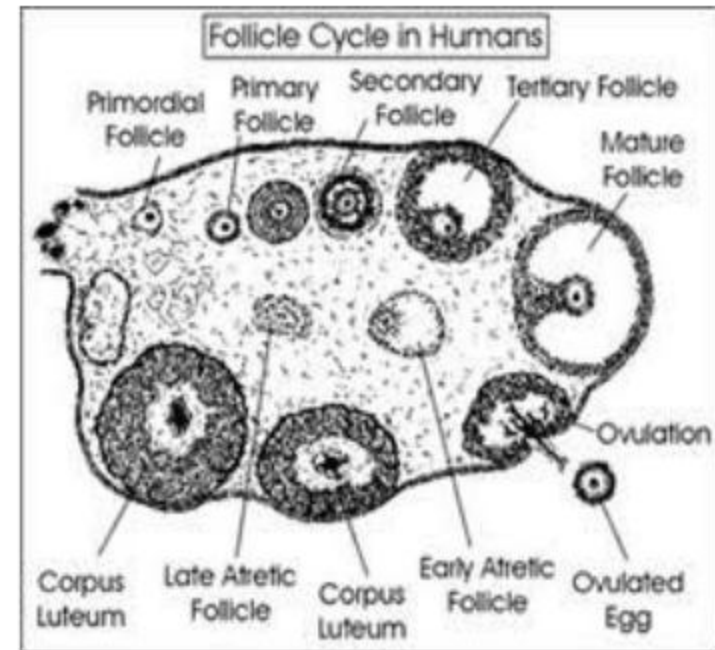
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OVARY

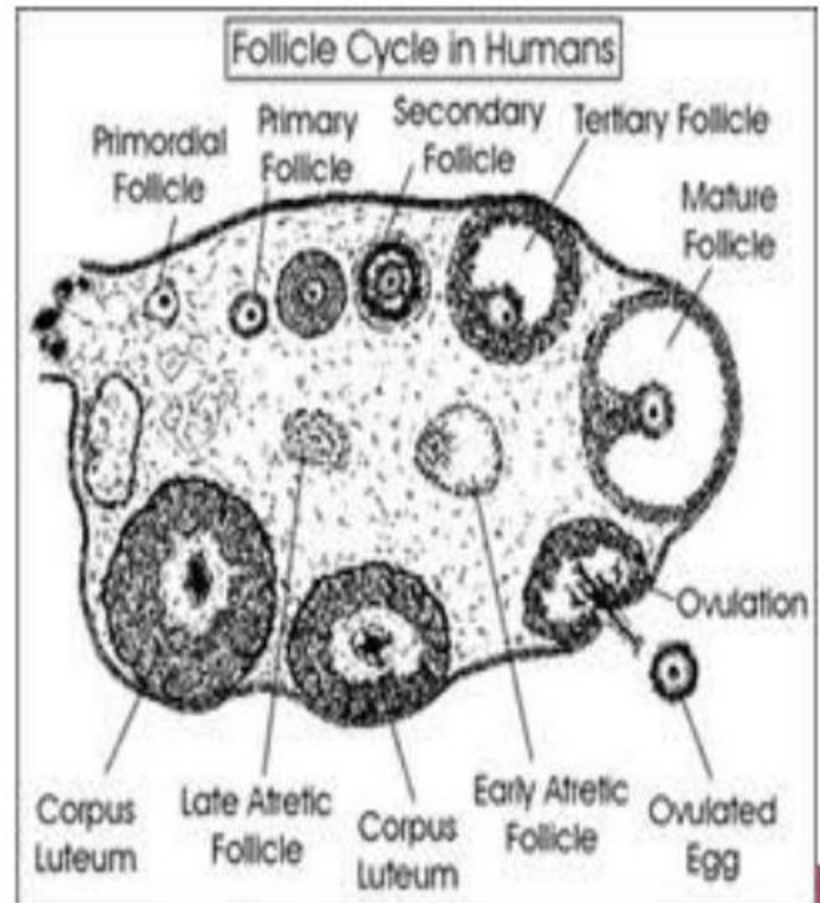
○ Two layer of a typical ovary in mammals are:

1. **cortex**, outer with developing **Graafian follicles**.
 - ovum with each follicle is nourished by follicular cells.
 - at maturity, certain follicles push to the surface of the ovary and either rupture to liberate the ovum (**ovulation**), or are reabsorbed.
2. **medulla**, which is inner and made up of connective tissue, blood vessels, lymphatic vessels, smooth muscle, and nerve fibers.



OVARY

- Ovarian follicles vary in size depending upon the season when it is examined and upon the volume characteristic of each species.
- Larger ova in lower forms because of their yolk content.
- Ovary attains maximum size during the breeding season in some vertebrates



OVARY: FISHES

- Paired or fused.
- Only the *right ovary fully develops* and the left degenerates in some elasmobranchs.
- Most teleosts have *saccular* type ovaries which produce large number of ova during the breeding season.
 - Ripe ova-->central ovarian cavity--->oviduct--->outside
 - Adult teleosts lack cloaca and have separate openings from urinary and digestive systems.



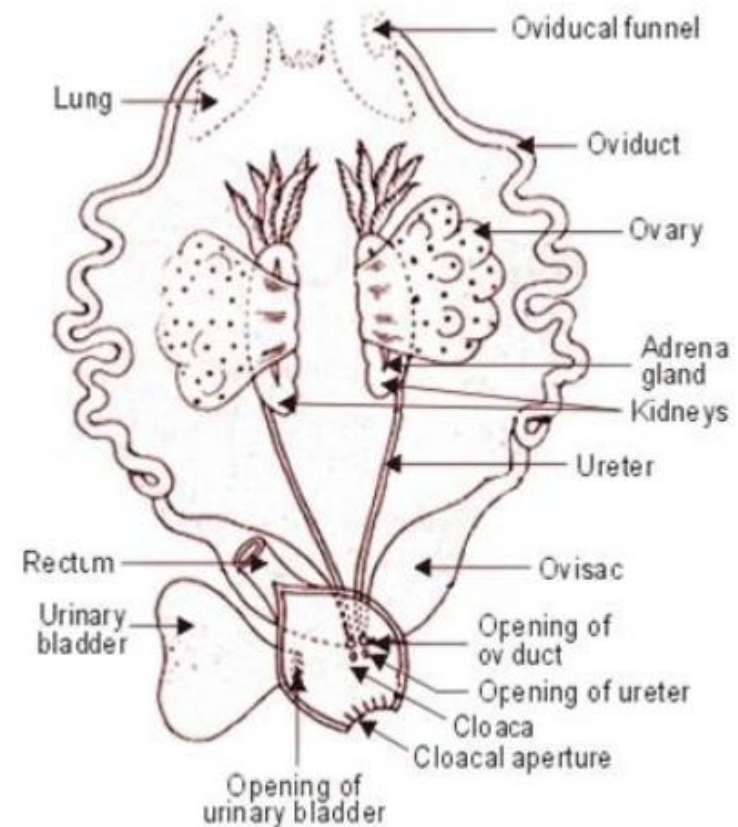
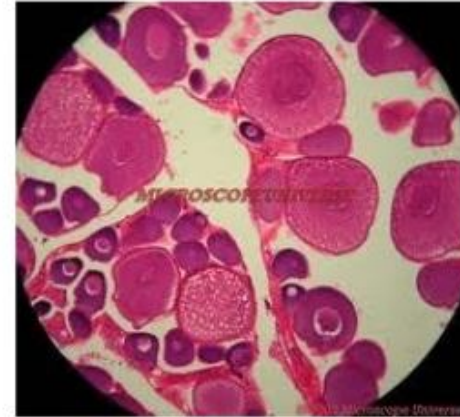
OVARY: FISHES

- Most are oviparous while others are ovoviviparous.
- Some have fertilized eggs that develop while inside the ovarian follicles
- Others have their young that develop within the cavities of the ovaries.



OVARY: AMPHIBIAN

- Saccular
- Ova escape into the coelom through their external walls.
- Shape varies with the shape of the body.
- Fat bodies are closely associated with the ovaries.



Urinogenital system of femal frog

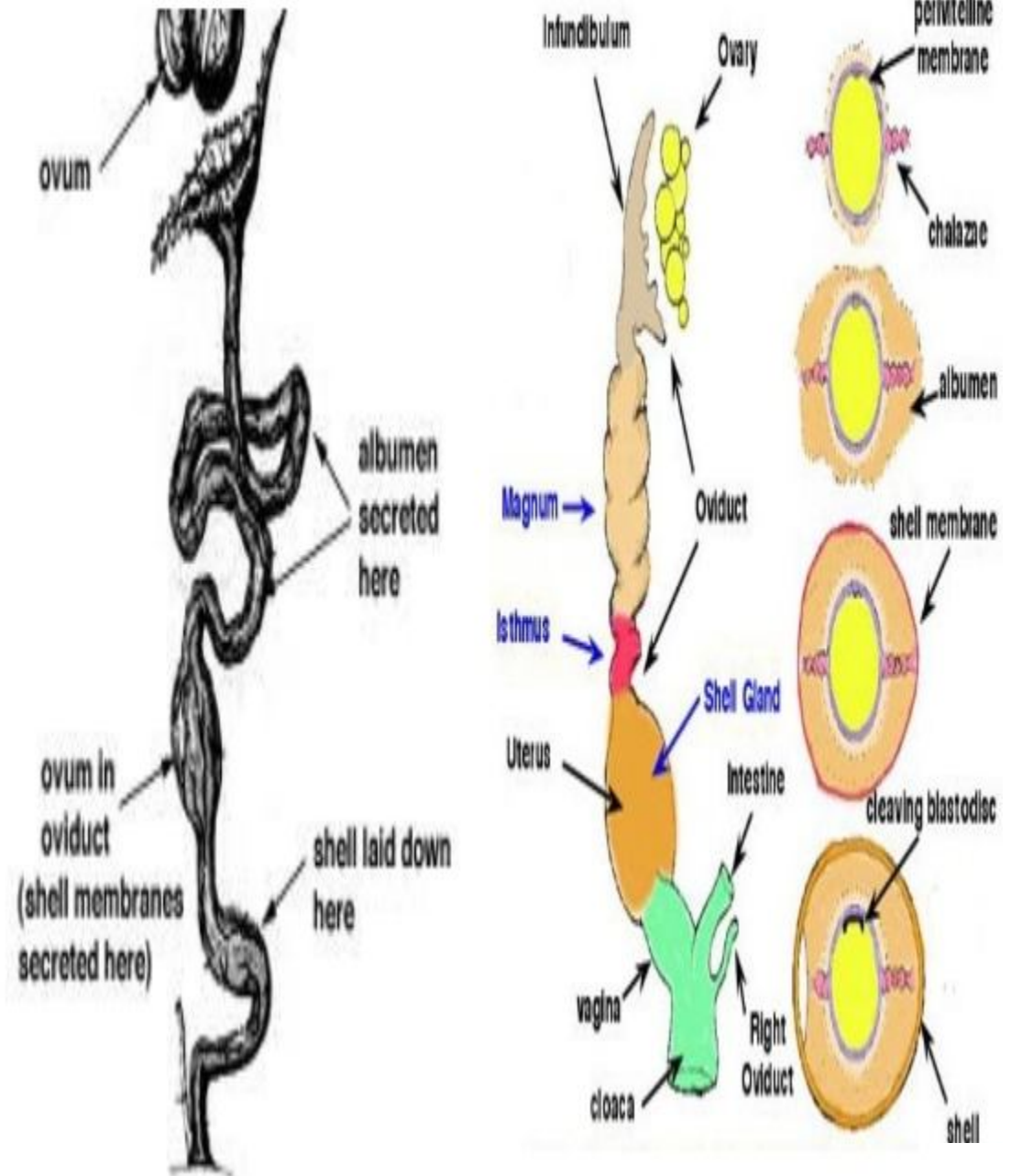
OVARY: REPTILES

- Snakes and lizards' ovaries are saccular and elongated.
- Turtles and crocodilians have solid ovaries.
- Certain ovoviviparous snakes and lizards have corpora lutea that form from ruptured follicles after ovulation.



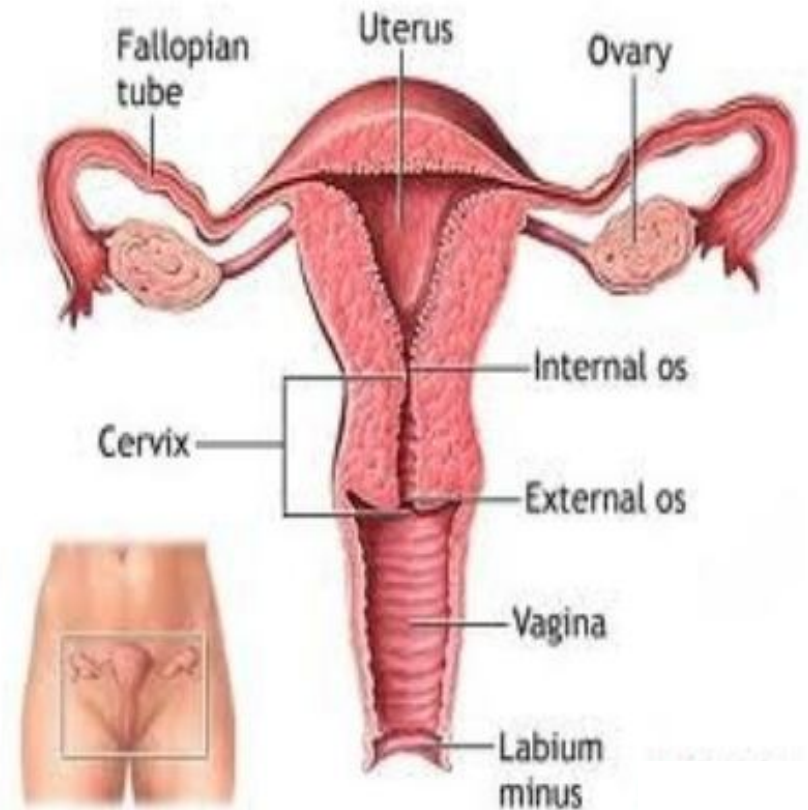
OVARY: BIRDS

- Both ovaries are present in embryonic development.
- In most birds, the right ovary degenerates, and the left becomes the functional gonad.
- **Stigma** or **cicatrix** is a band located on the surface of the follicle through which mature ova escape from the ovarian follicles into the coelom.



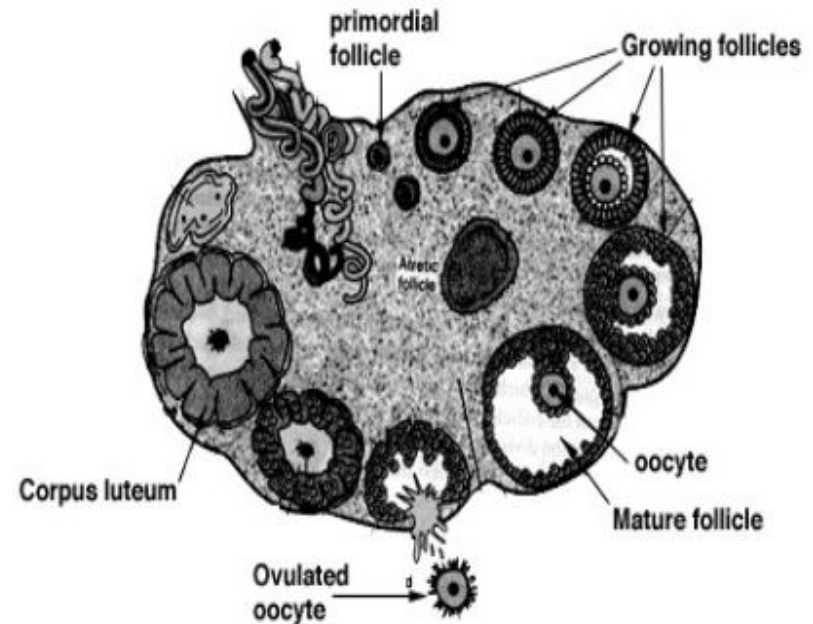
MAMMALIAN OVARIES

- Located in the lumbar or pelvic region.
- Considered small in relation to the size of the body of mammals.
- Placental mammals have compact ovaries with an **antrum** within the graafian follicles.
- Covered by **germinal epithelium** from which oocytes arise.
- Some of this **oocytes** become mature ova during the life of the individual.



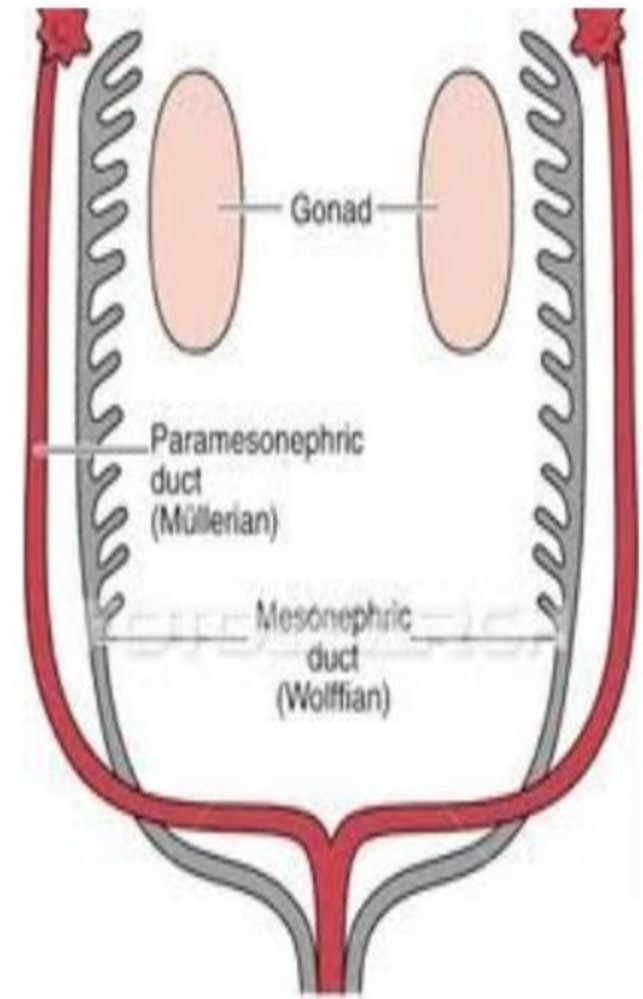
MAMMALIAN OVARIES

- Ovum escape the ovary when the wall of graafian follicle ruptures.
- Cells that remain after follicle rupture organize to form **corpus luteum**.
- **Corpus luteum** is one source of **progesterone** needed to maintain pregnancy.
- Before ovulation, **estrogen** is the predominant secretory products of the follicle cells.
- **Atretic follicles** are those that fail to rupture and degenerate.



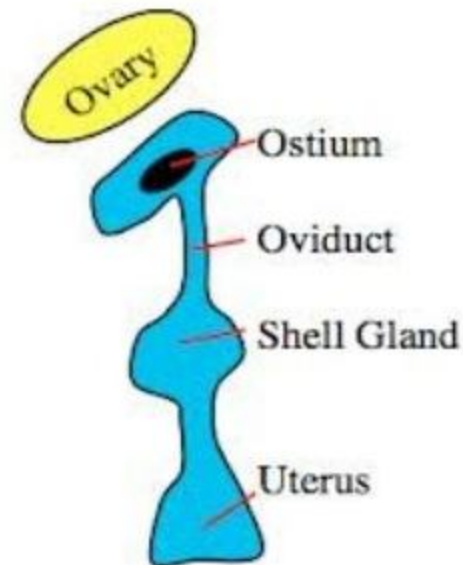
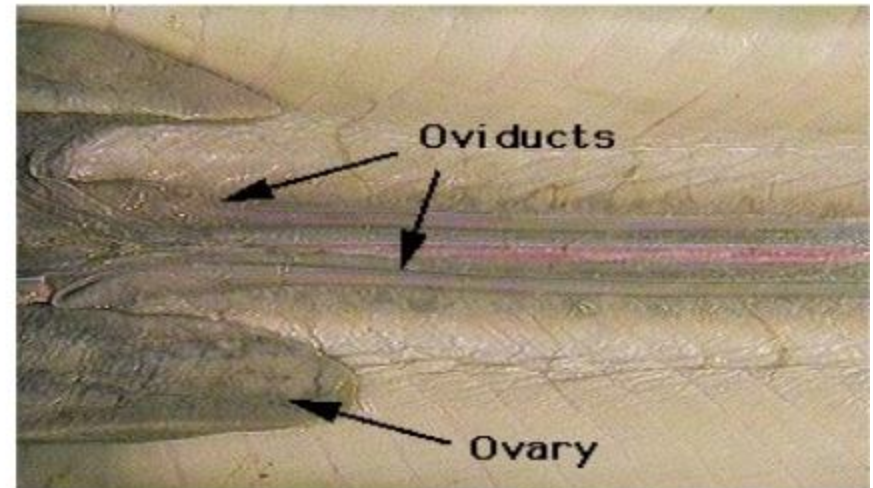
OVIDUCTS

- Modifications of the Mullerian ducts, which degenerates in the males.
- Differentiates into regions .
- Posterior portion expands to become the **uterus**.
- Serves as temporary storage site for eggs or a place where the young develops.



OVIDUCTS: FISHES

- Some teleosts have *modified abdominal pores* where eggs escape from the coelom.
- Elasmobranchs have **ostium tubae**, which opens into the coelom.
- Narrow distensible oviduct on either side.
- **Shell gland** is an enlargement of the oviduct.
- Beyond the shell gland is the **uterus** that opens into the cloaca.
- **Ovisac** shelters and nourishes the embryo in viviparous species.



REFERENCES:

Kent, George C & Carr, Robert K. Comparative Anatomy of the Vertebrates. *Urinogenital System.*