# Introduction to Histology: Reproductive System answer sheet

## Observations

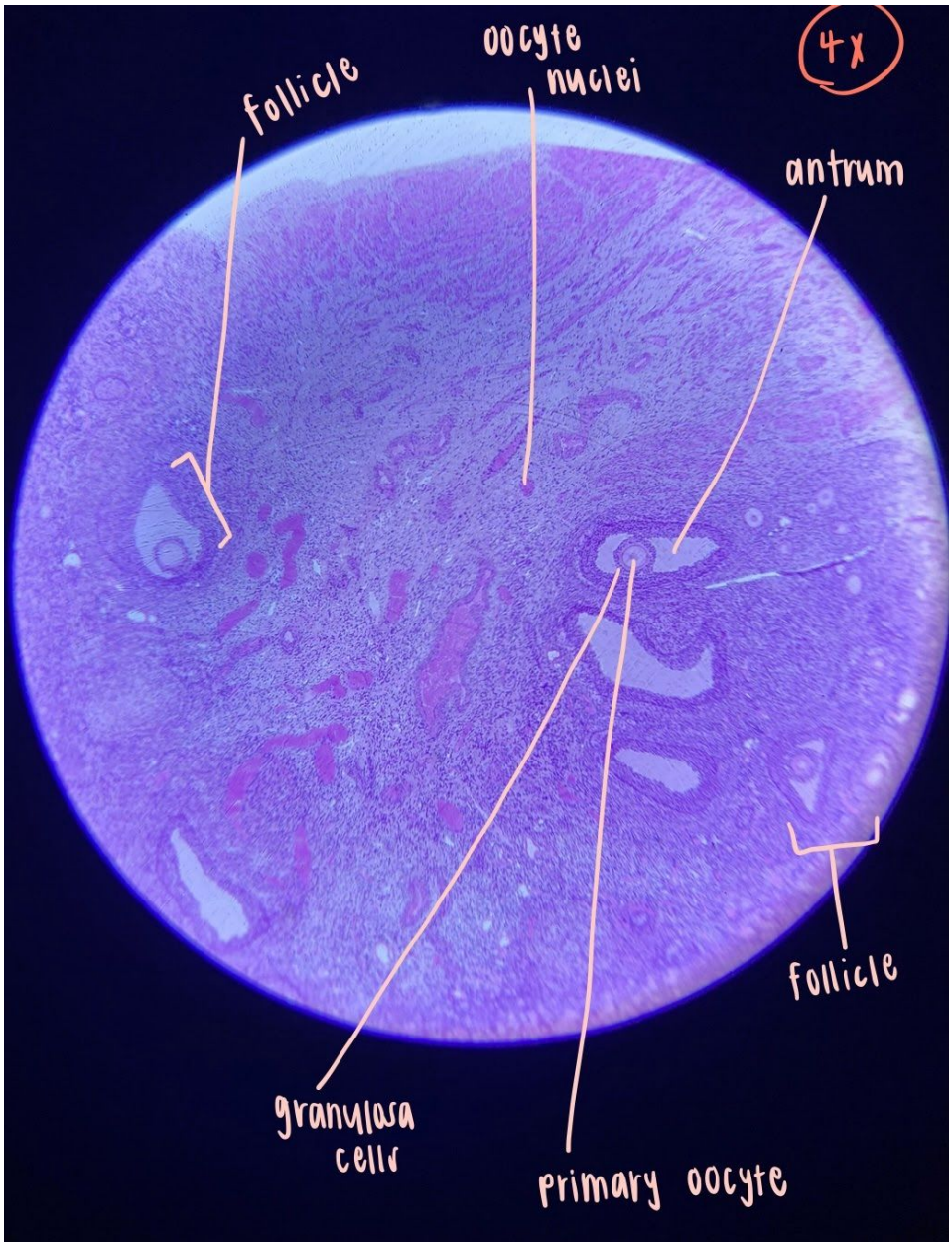
Take a picture and insert it in the appropriate section below also record the total magnification needed to best view the object. Label all slides as indicated in the Lab Manual.

**Testis**


Magnification used: 10X

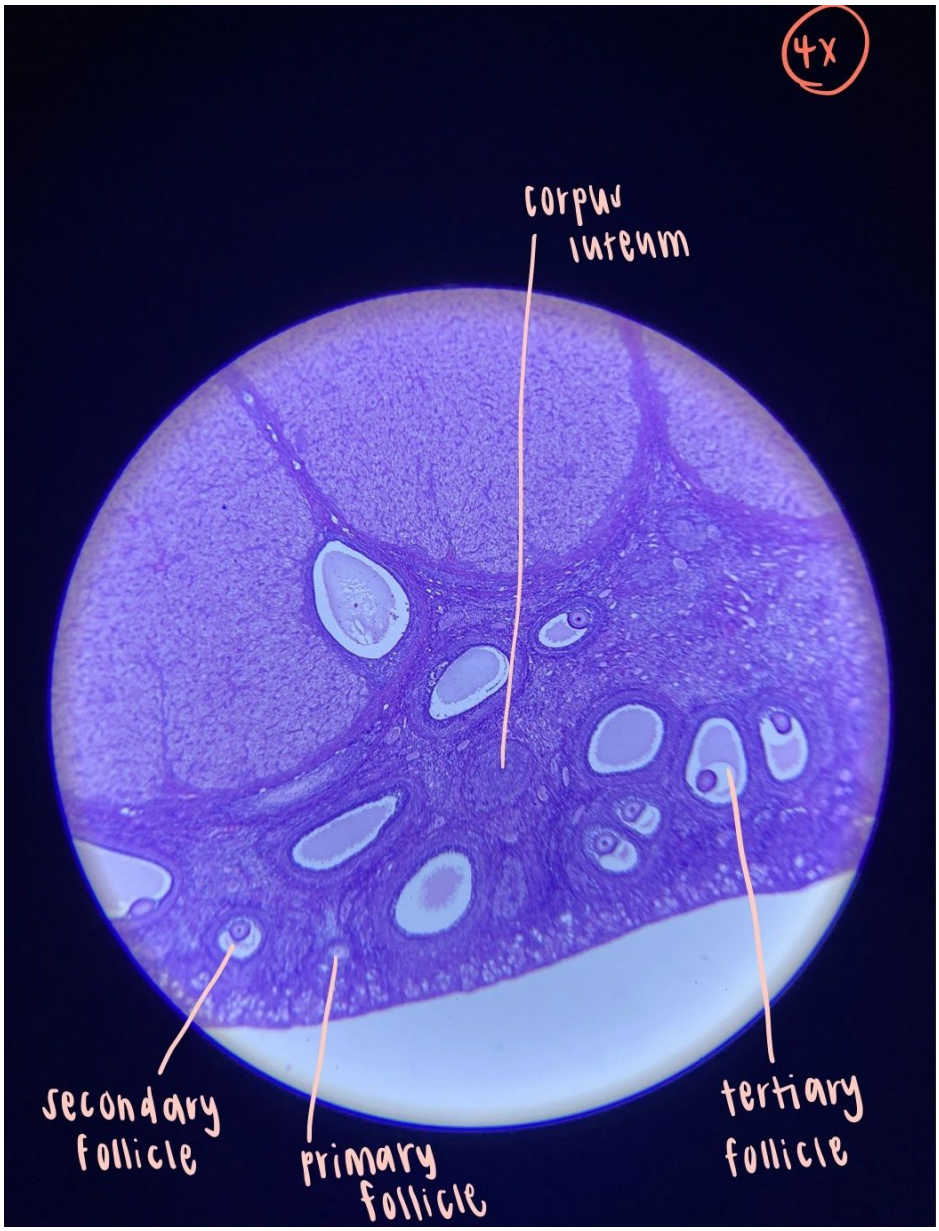
CAROLINA
DISTANCE LEARNING

**Mammal Ovary**



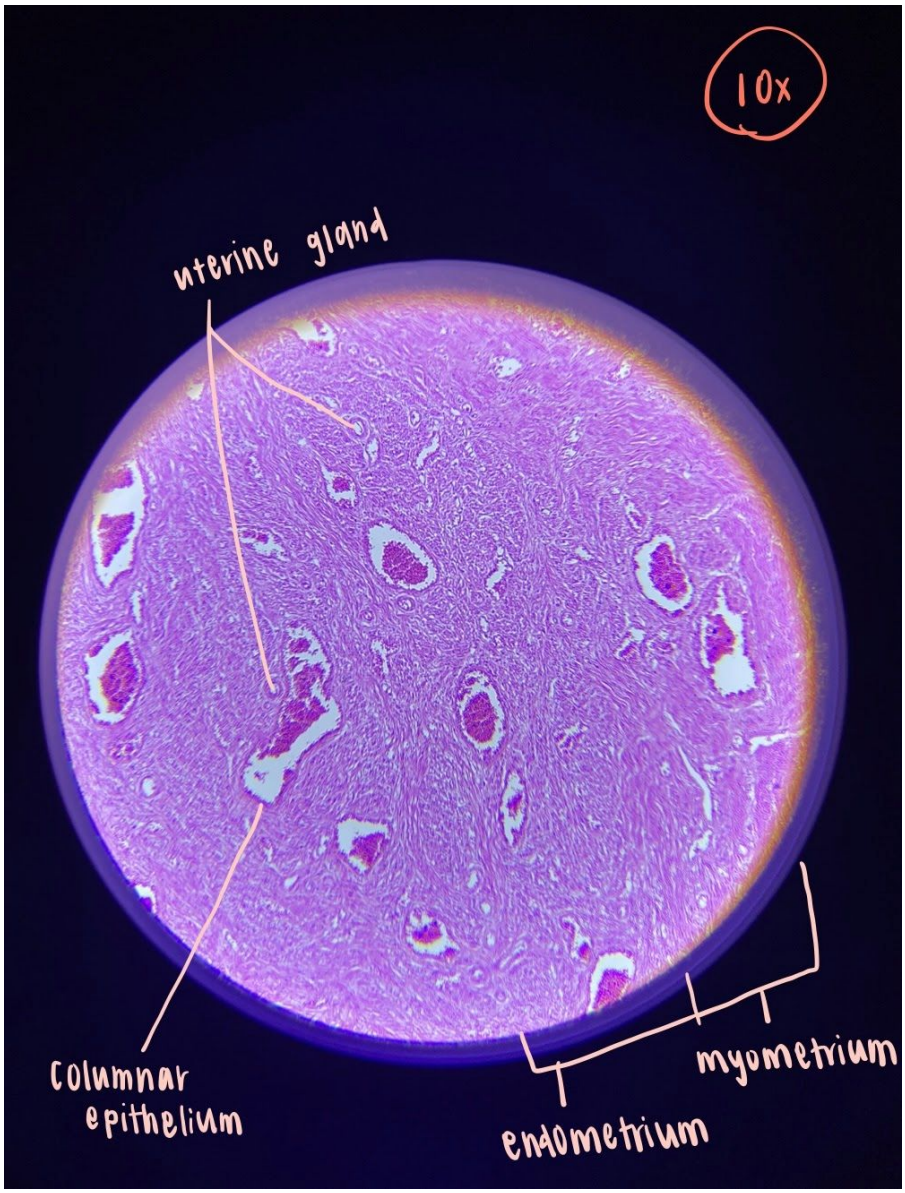

Magnification used: 4X

**Mammal Ovary Follicles**




Magnification used: 4X

**Human Uterus**




Magnification used: 10X

## Data table

Fill out the following table based on the information listed in the lab manual.

| Tissue type Testis | Best magnification | Provide at least 2 unique identifying features of this tissue type | Describe how these tissues appear under the microscope |
|---|---|---|---|
| Septa | 10x | - very fibrous<br>- acts as a partition | a smooth line near the edge |
| Interstitial cells | 10x or 40x | - surround tubules<br>- produce male sex hormones | a filled space with light shading; contains a nucleus |
| Spermatozoa | 4x, 10x | - lined with epithelial cells<br>- ring/oval shaped | These look like fingerprints or a flower with many small petals |
| Seminiferous tubule | 4x, 10x, 40x | - inside of lobules<br>- lined with epithelial cells | two circular cells near each other |
| Blood vessel | 10x or 40x | - dark rings since it supplies blood<br>- contains many layer/rings | a darker circle that is filled with many rings inside of it |
| **Tissue type Ovary** | **Best magnification** | **Provide at least 2 unique identifying features of this tissue type** | **Describe how these tissues appear under the microscope** |
| Oocyte nuclei | 4x, 10x | - no surrounding ring of epithelium<br>- very little to no antrum | small, round, pink circle |

| | | | |
|---|---|---|---|
| **Follicle** | 4x | - contains oocytes<br>- contains granulosa cells | two smaller cells with less clear space next to each other |
| **Antrum** | 4x, 10x, 40x | - intercellular space<br>- contains the oocytes | the lighter or clear space inside the cell; surrounds the primary oocyte |
| **Primary oocyte** | 4x, 10x, 40x | - the smallest cell until fluid fills the surrounding space<br>- egg maturation starts | small circle with a surrounding ring |
| **Granulosa cells** | 4x, 10x. 40x | - very grainy appearance<br>- surrounds oocytes | a dark ring around the primary oocyte |
| **Tissue type Follicles** | **Best magnification** | **Provide at least 2 unique identifying features of this tissue type** | **Describe how these tissues appear under the microscope** |
| **Primary follicle** | 10x | - surrounded by cuboidal cells<br>- smallest stage | the smallest circle/cell; no surrounding white fluid |
| **Secondary follicle** | 4x, 10x | - filled with more fluid than the primary follicle<br>- slightly bigger than primary follicle with more space | a small circle with a smaller amount of white surrounding; looks like an eyeball |

| | | | |
|---|---|---|---|
| **Tertiary follicle** | **10x** | - bigger than secondary follicle<br>- contains more follicular fluid than secondary follicles | looks like a fried egg; a larger portion of white surrounding |
| **Corpus luteum** | **4x or 10x** | - empty part of follicle<br>- can dissolve into the surrounding tissue | oval; blends in with the surrounding; similar to the eyes of a tree trunk |
| **Tissue type Uterus** | **Best magnification** | **Provide at least 2 unique identifying features of this tissue type** | **Describe how these tissues appear under the microscope** |
| **Myometrium** | **10x, 40x** | - sits under perimetrium<br>- contains smooth muscles | smoother than the endometrium |
| **Endometrium** | **10x, 40x** | - made of simple columnar epithelium<br>- on top of lamina propria | more marbling; so white parts mixed in and less smooth |
| **Uterine gland** | **40x** | - in between the columnar epithelium<br>- also the smallest ring/ circle | small circles; similar to a lacunae |
| **Columnar epithelium** | **40x** | - very dark border<br>- look for bigger dark cells that contain a white surrounding and the epithelium should be lining the inside of it | darker surrounding of bigger dark cells; looks like a beaded necklace |

## Questions

1. What is a granulosa cell? What is characteristic of a granulosa cell under the microscope? What is the function of the granulosa cell?

A granulosa cell is a somatic cell of the sex cord. It is closely associated with developing female sex hormones. Under a microscope, the granulosa cells look very

grainy and round. It forms a ring around oocytes. The function of the granulosa cells are to produce steroids and LH receptors, which regulates the production of hormones.

2. What are the differences in appearance on a slide between the endometrium and myometrium? What is the physiological reason for these differences?

The myometrium looks very smooth and not streaky because it contains smooth muscle. The endometrium contains a lot of marbling-look because it contains a lot of columnar epithelium in between it.

3. How can we easily distinguish the spermatozoa in a slide of the testis? Why do they look the way that they do

The spermatozoa is very distinguishable in the slides. They look similar to a fingerprint or even an egg shape with dots or lines surrounding it. They look like this because the cells are expanding when they mature. When they are not fully matured, they are more condensed together and a lot darker. The more they mature, the further the cells spread apart.

4. What is different between a primary follicle and secondary follicle in a microscope slide? Why?

The primary follicle is much smaller in size. The secondary follicle also contains more space and more follicular fluid. There are differences in these two follicles because the oocyte is maturing from one stage to another starting from primary to secondary.

5. What tissue type is very abundant in the tunica albuginea?

Fibrous connective tissue is very abundant in tunica albuginea. E;astin and collagen are very abundant in this layer.