

# Lab 10: Reproduction & Development

*Reminder: Field trip next week! Wear proper clothing and footwear for outside walking – no open-toed shoes! Meet on Graham Avenue near Handicapped parking lot. Bring your manual (C69-76) and a pen or pencil.*

## I. Movie: “The Miracle of Life”

- Answer questions on handout while you view the movie.

## II. REPRODUCTION

### GOALS:

- ★ Identify and state the functions of human male and female reproductive structures using plastic models.
- ★ Identify and state the functions of the female reproductive structures using the pig uterus specimen.
- ★ State the key differences between human and pig female reproductive structures.
- ★ Identify and state the functions of the extraembryonic membranes using pig fetus specimens.

### Human Reproduction

- pp. 202-207: Read and use diagrams to identify and state the functions of the following:

#### Female

- ⇒ ovary
- ⇒ oviduct
- ⇒ uterus
- ⇒ cervix
- ⇒ vagina
- ⇒ clitoris
- ⇒ bladder
- ⇒ urethra

#### Male

- ⇒ testis
- ⇒ epididymus
- ⇒ vas deferens
- ⇒ bulbourethral gland
- ⇒ urethra
- ⇒ bladder
- ⇒ penis
- ⇒ prostate gland

### Pig Uterus & Extraembryonic Membranes

- View demonstration. Take notes &/or listen carefully.
- View labeled pig uterus & fetuses. Identify and know the functions of the following:
  - ⇒ uterine horn
  - ⇒ uterine body
  - ⇒ cervix
  - ⇒ ovaries
  - ⇒ oviducts
  - ⇒ placenta
  - ⇒ amnion
  - ⇒ chorion

## III. DEVELOPMENT

### GOALS:

#### **You should be able to.....**

- ★ Describe the basic stages of animal embryonic development.
- ★ Describe the anatomy of an unfertilized chicken egg.
- ★ Label the four extraembryonic membranes of chick and human on a diagram (p. 269).
- ★ Contrast the location & functions of extraembryonic membranes of humans and chicks (p. 268).
- ★ List physical characteristics present in chick embryo at 24 hr, 48 hr, 72 hr, and 96 hrs of development.
- ★ Identify the age of a chick embryo that has been preserved on a slide (24, 48, 72, or 96 hrs old).
- ★ List key characteristics found in human embryos at 5, 14, 17, and 20 weeks.

### Introduction

- pp. 263-267: Read & look at diagrams. Define and be able to tell what occurs during these stages:
  - ⇒ zygote
  - ⇒ morula
  - ⇒ blastula
  - ⇒ gastrula

### **Chick Development**

□ View the demonstration of a living 2-day old chick embryo. Open a 4-day old chick embryo following the directions given in class.

#### **Key Terms:**

- |                                 |             |
|---------------------------------|-------------|
| ⇒ ovum                          | ⇒ yolk sack |
| ⇒ albumen                       | ⇒ amnion    |
| ⇒ shell                         | ⇒ chorion   |
| ⇒ germinal vesicle with nucleus | ⇒ allantois |
| ⇒ vitelline blood vessels       |             |

□ pp. 268-277: View **slides** of chick embryos at 24 hrs, 48 hrs, 72 hrs, & 96 hrs old. Use reading and diagrams to help you identify the following structures & **determine at which stage they appear:**

- |                    |                     |                    |
|--------------------|---------------------|--------------------|
| ⇒ head fold        | ⇒ heart             | ⇒ ear              |
| ⇒ primitive streak | ⇒ vitelline vessels | ⇒ yolk sac         |
| ⇒ neural fold      | ⇒ brain             | ⇒ limb buds        |
| ⇒ neural tube      | ⇒ midbrain          | ⇒ tail bud         |
| (groove)           | ⇒ forebrain         | ⇒ allantois        |
| ⇒ notochord        | ⇒ hindbrain         | ⇒ digestive system |
| ⇒ somites          | ⇒ eye               |                    |

**24 hrs:**

**48 hrs:**

**72 hrs:**

**96 hrs:**

### **Human Development**

□ pp. 277-279: View **photos** (back of room) & **preserved specimens** (on cart) representing human embryonic development. Use lab manual to help you determine physical characteristics that are present at each stage.

5 weeks:

14 weeks:

17 weeks:

20 weeks:

### **Review**

□ p. 280 Answer questions 1-5, 7-12.