1. MEIOSIS, FERTILIZATION, GROWTH & DEVELOPMENT

Station 1: Meiosis—Spermatogenesis

References: ***Lab Manual, p. 212 and Fig. 38.2.***
Textbook, p. 851-855.
Workbook, p. 280-281, #6, p. 282, #8.

On the diagram on the lab table:

Q1A. Which letter identifies spermatogonia? Are spermatogonia diploid or haploid? Label spermatogonia and color them green on p. 281 of your workbook.
Q1B. Which letter identifies the first haploid cell produced by meiosis? Name it. Label it and color it orange on p. 281 of your workbook.
Q2A. Which letter identifies haploid cells that extrude cytoplasm and change their shape to become sperm? Name them. How many chromosomes do they contain? Label them and color them blue on p. 281 of your workbook.
Q2B. Name the cells that secrete testosterone. What hormone stimulates the production of testosterone?

Station 2: Meiosis—Oogenesis

References: ***Lab Manual, p. 215 and Fig. 38.6.***
Textbook, p. 865-870.
Workbook, p. 285, #13, p. 286-287, #14 and p. 290, #21.

On the diagram on the lab table:

Q3A. Which letter identifies the structure that surrounds the secondary oocyte? Name it.
Q3B. Which letter identifies a primary oocyte? Are primary oocytes haploid or diploid?
Q4A. When in a female's life cycle does the first meiotic division of oocytes occur?
Q4B. Name the two cells produced by this first meiotic division. What two letters identify them?
Q5A. Which letter identifies a cell released at ovulation? Name it. How many chromosomes does it contain?
Q5B. When does the second meiotic division take place in the female life cycle?

On the model of Ovulation, Fertilization and Implantation:

Q6A. Which letter on the model shows where the second division of meiosis will occur?
Q6B. What is this event called?
Q7A. Name the cell resulting from the event in Q6B.
Q7B. Give the chromosome number of this new cell. Is it haploid or diploid?
Q8A. Which letter on the model shows implantation? How many days after fertilization does implantation occur?
Q8B. What hormone is produced to signal the ovary that implantation has occurred? Why?

Station 3: Human Growth and Development: Cleavage

References: ***Textbook, p. 899-904.***
Workbook, p. 291, #22.

Observe the series of models on the lab table:

Q9A. What event is occurring here?
Q9B. What event is occurring here?
Q10A. What is this cell called?
Q10B. By what process will this cell divide?
Q11A. What are these individual cells called?
Q11B. Identify this structure.
Q12A. Identify this entire structure.

Station 4: Human Growth and Development: Embryonic Development

References: ***Textbook, p. 904-912.***

Workbook, p. 292, #23 and #25.

Observe the series of models on the lab table:

Q12B. About 6 days after cleavage begins, the blastocyst is mature. Which letter identifies the trophoblast? Color it green on p. 291 in your workbook. Name the hormone secreted by the trophoblast.

Q13A. Which letter identifies the endometrium? How does the hormone named in Q12B affect the endometrium?

Q13B. Which letter identifies the part of the blastocyst that will become the embryo? Name it. Color it yellow on p. 291 of your workbook.

Q14A. How many germ layers does this model have in the embryoblast? Name them.

Q14B. How many total germ layers are there? What are they called?

Q15A. Which letter identifies the structure that produces the first blood cells? Name it.

Q15B. Which letter identifies the structure developing from projections growing out of the trophoblast? Name it.

Q16A. What will form where the structure in Q15B. interacts with the endometrium? How will it connect to the embryo?

Q16B. Which letter identifies a structure that will give rise to the umbilical vein and arteries? Name it.

Q17A. Which letter identifies a structure that provides the embryo and fetus with a fluid environment? Name it.

Q17B. Which letter identifies the structure that becomes a part of the digestive system? Name it

Station 5: Human Growth and Development: Fetal Development

References: Textbook, p. 913-918.

Observe the series of models on the lab table:

Q18A. When does the fetal period begin and end?

Q18B. Which letter identifies the structure that developed from the trophoblast as it invaded the endometrium? Name it.

Q19A. Which letter identifies the structure that developed from the connecting stalk? Name it.

Q19B. Which letter identifies the structure that ruptures when a pregnant woman's "water breaks"? Name it.

Q20A. In which developmental stage, cleavage, embryonic period, or fetal period, do the organ systems form?

Q20B. In which developmental stage, cleavage, embryonic period, or fetal period, do the organ systems become functional?

Q21. CLINICAL APPLICATION THOUGHT QUESTION: (Answer at the bottom of your lab report.) *One of your patients has just found out that she is pregnant with twins. She wants to know if her twins will be identical or fraternal. What is the difference in these types of twins?*

Turn in p.281 and 291 from your workbook with your lab report.