Human Prenatal Development – Unit Final Exam

Name: _____
Date: _____

Instructions:
Answer all questions. Use the space provided.
For multiple-choice questions, circle the best answer.

Investigation 1: Foundations of Prenatal Development

1. Why is mitosis essential for early human prenatal development after fertilization has occurred?

2. How does cell division during early development differ from simple growth in size?

3. Why is it important that genetic information remains accurate when cells divide during prenatal development?

4. Which statement best explains why early prenatal development depends on repeated cell division?

A. Cell division increases the size of existing cells
B. Cell division creates new cells needed to form tissues and organs
C. Cell division changes the DNA in developing cells
D. Cell division slows as development begins

Investigation 2: Differentiation and Early Organ Formation

5. Why must cells begin to specialize rather than all remain the same during prenatal development?

6. How does cell specialization contribute to the formation of tissues and organs?

7. Why is timing important when cells specialize during early development?

8. Which statement best describes the relationship between structure and function during early organ development?

A. Structure and function are unrelated during development
B. Structures form first, and function develops much later
C. Structures develop in ways that support their specific functions
D. Function determines which structures will disappear

Investigation 3: Growth, Coordination, and Increasing Complexity

9. Why does prenatal development involve coordination among multiple body systems rather than isolated growth?

10. How does growth during this stage differ from earlier stages of prenatal development?

11. Why is development of the nervous system important for coordinating other body systems?

12. Which statement best explains what increasing complexity during prenatal development indicates?

A. Development is slowing down
B. Individual systems are becoming less important
C. Body systems are beginning to work together
D. Growth is occurring randomly

Investigation 4: Preparing for Birth – Late Fetal Development

13. Why does late prenatal development focus more on strengthening and refinement rather than forming new body structures?

14. How does increased coordination and responsiveness indicate developmental progress?

15. Why is continued brain development important even late in prenatal development?

16. Which statement best explains how late prenatal development prepares the fetus for life after birth?

A. Development slows because most growth is complete
B. Systems become more coordinated to support independent function
C. New organs begin forming just before birth
D. Body systems operate independently of one another

Lab-Based Questions

17. In several lab activities, students used physical or visual models instead of observing real prenatal development directly. Why was using models appropriate for these investigations?

A. Models are easier to grade than real observations
B. Models allow students to study prenatal development safely and clearly when direct observation is not possible
C. Models provide more detailed information than real biological systems
D. Models replace the need for scientific explanations

18. In the labs, students focused on how development changes step by step (Modeling the Miracle, for example), rather than examining only a single stage. Why was this approach important for understanding prenatal development?

A. Prenatal development happens randomly and must be repeated many times
B. Observing change over time helps show how structures and functions develop in sequence.
C. Single stages of development are inaccurate
D. Developmental stages are unrelated to one another

19. Some lab activities simplified complex biological processes rather than including every detail of prenatal development. Why was this simplification appropriate?

A. Simplification reduces the amount of science students must learn
B. Simplification helps students focus on the main developmental idea being studied
C. Real biological systems cannot be studied scientifically
D. Simplified labs guarantee identical results for all students

20. In the Preparing for Birth lab, students used models and observations to focus on how the fetus becomes more ready to function at birth, rather than forming new body structures. What was the main reason for this focus in the lab?

A. Most body structures are already formed earlier, and late development prepares the fetus to function after birth
B. New structures stop developing completely before birth
C. Late prenatal development is less important than early development
D. Models cannot be used to show body structures