

Chapter 01 Embryologic Development of the Cardiopulmonary System

1. Chemoreceptors play a role in the regulation of
 - a. cardiac contractility
 - b. hypertension
 - c. ventilation
 - d. blood vessel diameter

ANSWER: c

2. At what point in development does blood begin to flow?
 - a. immediately after delivery
 - b. immediately preceding delivery
 - c. around the third week
 - d. two days after conception

ANSWER: c

3. Pressures in the right, or venous system, compared to those in the left, or arterial system of the fetus are
 - a. higher
 - b. incomplete
 - c. lower
 - d. the same

ANSWER: a

4. The central and peripheral nervous system arise from which germ layer?
 - a. endoderm
 - b. phyloderm
 - c. mesoderm
 - d. ectoderm

ANSWER: d

5. Normally, fetal lung fluid moves steadily at what rate?
 - a. 15 L/hour
 - b. 1 ml/hour
 - c. 15 ml/hour
 - d. 100 ml/hour

ANSWER: c

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6. Fetal lung maturity can be predicted by withdrawing a sample of amniotic fluid and comparing the level of phosphatidylglycerol (PG) to
- ethanol
 - sphingomyelin
 - lecithin
 - serum

ANSWER: b

7. Which of the following carries the fresh blood from the placenta through the umbilical cord and into the fetus?
- umbilical vein
 - umbilical artery
 - hepatic portal vein
 - aorta

ANSWER: a

8. Which of the following prevents the bending or pinching of the umbilical cord that may stop blood flow to the infant?
- arteries
 - Wharton's jelly
 - veins
 - amnion

ANSWER: b

9. Baroreceptors are stimulated by
- pH
 - ventilation
 - oxygen
 - stretch

ANSWER: d

10. Which condition is characterized by the rapid deterioration in the respiratory status of a newborn following delivery?
- respiratory distress syndrome (RDS)
 - pneumonia
 - sudden acute respiratory syndrome (SARS)
 - asthma

ANSWER: a

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11. The change from fetal circulation to adult circulation is called
- pulmonary pressure
 - transition
 - coordination
 - resuscitation

ANSWER: b

12. Polyhydramnios indicates a problem with the
- umbilical cord
 - urinating mechanism of the fetus
 - swallowing mechanism of the fetus
 - cardiovascular function of the fetus

ANSWER: c

13. The thicker, outer layer of the embryonic disc, or blastoderm, is the
- embryo
 - ectoderm
 - endoderm
 - mesoderm

ANSWER: b

14. Why must the lung fluid be completely evacuated from the lungs at birth?
- To allow for unhindered ventilation in the neonate
 - To collapse the airways during birth
 - To reduce the size of the infant passing through the birth canal
 - To allow the infant to nurse

ANSWER: a

15. Alveoli continue to
- increase in number for 2 years after birth
 - increase in number for 8 years after birth
 - maintain their count throughout childhood as the lungs are completely developed at birth
 - increase in number for the entire lifetime

ANSWER: b

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16. By the fifth week of development, the single atrium is divided into two separate chambers by the
- pulmonary artery
 - sinus venosus
 - septum primum
 - truncus arteriosus

ANSWER: c

17. At which of the following stages does the ovum enter the uterus?
- morula
 - blastomeres
 - blastocyst
 - trophoblast

ANSWER: a

18. The foramen ovale is located between the right atrium and
- lungs
 - right ventricle
 - left ventricle
 - left atrium

ANSWER: d

19. Secondary crests will eventually form
- pulmonary surfactant
 - goblet cells
 - serous cells
 - true alveoli

ANSWER: d

20. At the end of 40 weeks gestation, how much fluid is present in the amnion?
- 10 milliliters
 - 10 liters
 - 1 milliliter
 - 1 liter

ANSWER: d

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21. At which stage of fetal lung development does the greatest amount of vascularization occur?
- a. pseudoglandular
 - b. canalicular
 - c. saccular
 - d. embryonal

ANSWER: b

22. Which substance works to lower surface tension on the alveolar wall?
- a. blood
 - b. mucus
 - c. serum
 - d. surfactant

ANSWER: d

23. Exposure to which of the following can lead to severe congenital malformations?
- a. food coloring
 - b. radiation
 - c. vitamins
 - d. sugar

ANSWER: b

24. The first shunt encountered after blood enters the fetal abdominal cavity is the
- a. ductus venosus
 - b. foramen ovale
 - c. inferior vena cava
 - d. superior vena cava

ANSWER: a

25. As the radius of a bubble, or alveolus, decreases, the surface tension
- a. fluctuates unpredictably
 - b. stays the same
 - c. decreases
 - d. increases

ANSWER: d