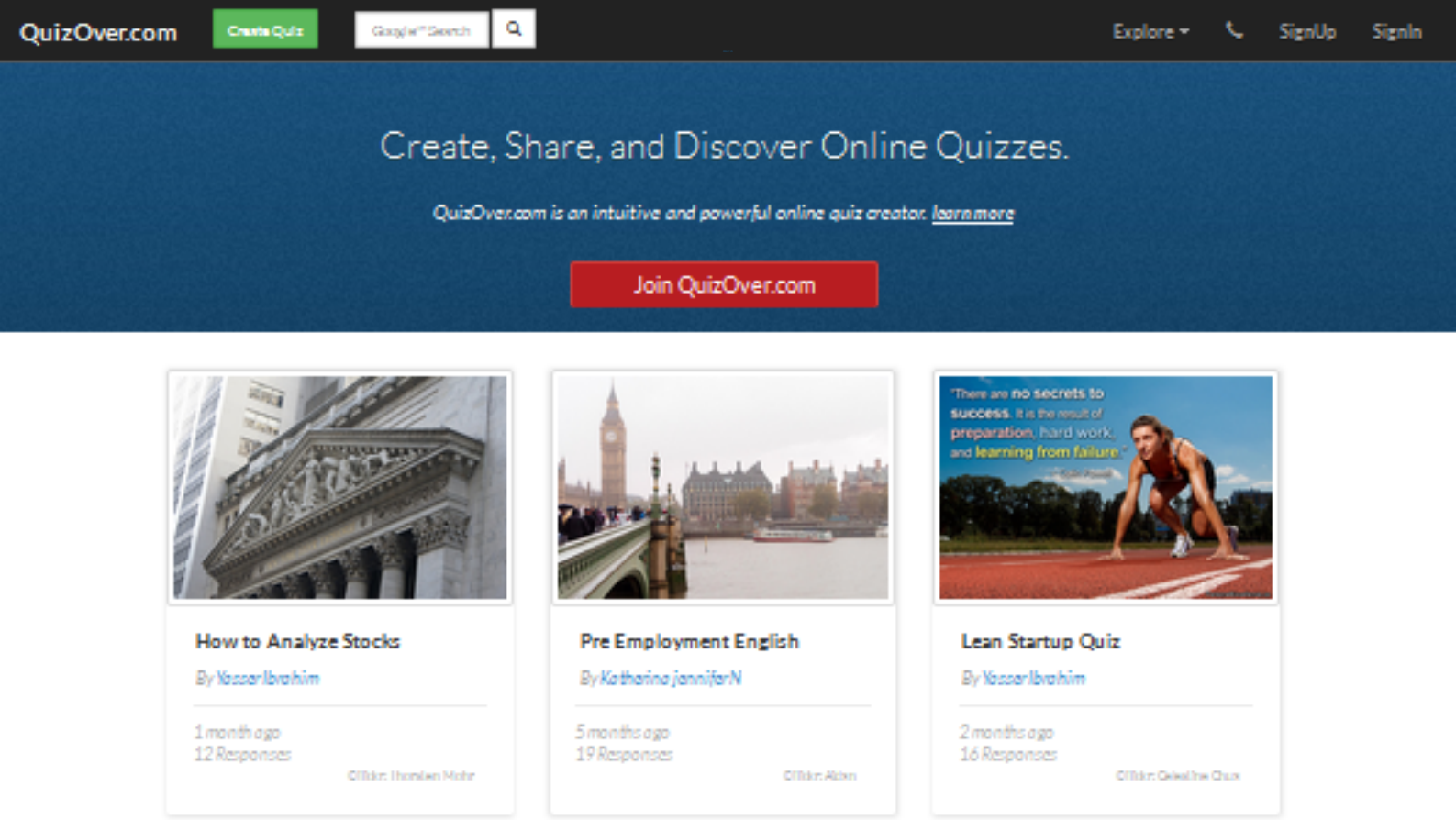
A&P 28 Development & Inheritance Essay

Development &Inheritance

Author: OpenStax College

Published 2014



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4. Chapter: A&P 28 Development & Inheritance Essay

1. A&P 28 Development & Inheritance Essay Questions

4.1.1. View this time-lapse movie (http://openstaxcollege.org/l/conceptus)...

Author: OpenStax College

View this time-lapse movie (http://openstaxcollege.org/l/conceptus) of a conceptus starting at day 3.

What is the first structure you see? At what point in the movie does the blastocoel first appear? What event occurs at the end of the movie?

- The first structure shown is the morula. The blastocoel appears at approximately 20 seconds. The movie ends with the hatching of the conceptus.

Check the answer of this question online at QuizOver.com:
Question: View this time-lapse movie http:/ OpenStax College Anatomy Physiology

4.1.2. Use this interactive tool (http://openstaxcollege.org/l/embryogenes...

Author: OpenStax College

Use this interactive tool (http://openstaxcollege.org/l/embryogenesis) to view the process of embryogenesis from the perspective of the conceptus (left panel), as well as fetal development viewed from a maternal cross-section (right panel).

Can you identify when neurulation occurs in the embryo?

- Neurulation starts in week 4. 3 A regular heartbeat can be detected at approximately 8 weeks.

Check the answer of this question online at QuizOver.com:
Question: Use this interactive tool http:/ OpenStax College Anatomy Physiology

4.1.3. Visit this site (http://openstaxcollege.org/l/pregstages) for a sum...

Author: OpenStax College

Visit this site (http://openstaxcollege.org/l/pregstages) for a summary of the stages of pregnancy, as experienced by the mother, and view the stages of development of the fetus throughout gestation.

At what point in fetal development can a regular heartbeat be detected?

- A regular heartbeat can be detected at approximately 8 weeks.

4.1.4. Darcy and Raul are having difficulty conceiving a child.
Darcy ovul...

Author: OpenStax College

Darcy and Raul are having difficulty conceiving a child.

Darcy ovulates every 28 days, and Raul's sperm count is normal. If we could observe Raul's sperm about an hour after ejaculation, however, we'd see that they appear to be moving only sluggishly.

When Raul's sperm eventually encounter Darcy's oocyte, they appear to be incapable of generating an adequate acrosomal reaction.

Which process has probably gone wrong?

- The process of capacitation appears to be incomplete. Capacitation increases sperm motility and makes the sperm membrane more fragile.
  This enables it to release its digestive enzymes during the acrosomal reaction.
  When capacitation is inadequate, sperm cannot reach the oocyte membrane.

4.1.5. Sherrise is a sexually active college student. On Saturday night, s...

Author: OpenStax College

Sherrise is a sexually active college student. On Saturday night, she has unprotected sex with her boyfriend.

On Tuesday morning, she experiences the twinge of midcycle pain that she typically feels when she is ovulating.

This makes Sherrise extremely anxious that she might soon learn she is pregnant.

Is Sherrise's concern valid? Why or why not?

- Sherrise's concern is valid. Sperm may be viable for up to 4 days; therefore, it is entirely possible that capacitated sperm are still residing in her uterine tubes and could fertilize the oocyte she has just ovulated.

4.1.6. Approximately 3 weeks after her last menstrual period, a sexually a...

Author: OpenStax College

Approximately 3 weeks after her last menstrual period, a sexually active woman experiences a brief episode of abdominopelvic cramping and minor bleeding.

What might be the explanation?

- The timing of this discomfort and bleeding suggests that it is probably caused by implantation of the blastocyst into the uterine wall.

Check the answer of this question online at QuizOver.com:
Question: Approximately 3 weeks after her last OpenStax College Anatomy Quest

4.1.7. The Food and Nutrition Board of the Institute of Medicine recommend...

Author: OpenStax College

The Food and Nutrition Board of the Institute of Medicine recommends that all women who might become pregnant consume at least 400 µg/day of folate from supplements or fortified foods. Why?

- Folate, one of the B vitamins, is important for the healthy formation of the embryonic neural tube, which occurs in the first few weeks following conception-often before a woman even realizes she is pregnant. A folate-deficient environment increases the risk of a neural tube defect, such as spina bidifa, in the newborn.

Check the answer of this question online at QuizOver.com:
Question: The Food and Nutrition Board of the OpenStax College Anatomy Quest

4.1.8. What is the physiological benefit of incorporating shunts into the ...

Author: OpenStax College

What is the physiological benefit of incorporating shunts into the fetal circulatory system?

- Circulatory shunts bypass the fetal lungs and liver, bestowing them with just enough oxygenated blood to fulfill their metabolic requirements.
  Because these organs are only semifunctional in the fetus, it is more efficient to bypass them and divert oxygen and nutrients to the organs that need it more.

Check the answer of this question online at QuizOver.com:
Question: What is the physiological benefit of OpenStax College Anatomy Quest

4.1.9. Why would a premature infant require supplemental oxygen?

Author: OpenStax College

Why would a premature infant require supplemental oxygen?

- Premature lungs may not have adequate surfactant, a molecule that reduces surface tension in the lungs and assists proper lung expansion after birth.
  If the lungs do not expand properly, the newborn will develop hypoxia and require supplemental oxygen or other respiratory support.

Check the answer of this question online at QuizOver.com:
Question: Why would a premature infant require OpenStax College Anatomy Quest

4.1.10. Devin is 35 weeks pregnant with her first child when she arrives at...

Author: OpenStax College

Devin is 35 weeks pregnant with her first child when she arrives at the birthing unit reporting that she believes she is in labor.

She states that she has been experiencing diffuse, mild contractions for the past few hours.

Examination reveals, however, that the plug of mucus blocking her cervix is intact and her cervix has not yet begun to dilate.

She is advised to return home. Why?

- Devin is very likely experiencing Braxton Hicks contractions, also known as false labor.
  These are mild contractions that do not promote cervical dilation and are not associated with impending birth.
  They will probably dissipate with rest.

4.1.11. Janine is 41 weeks pregnant with her first child when she arrives a...

Author: OpenStax College

Janine is 41 weeks pregnant with her first child when she arrives at the birthing unit reporting that she believes she has been in labor "for days" but that "it's just not going anywhere." During the clinical exam, she experiences a few mild contractions, each lasting about 15-20 seconds; however, her cervix is found to be only 2 cm dilated, and the amniotic sac is intact. Janine is admitted to the birthing unit and an IV infusion of pitocin is started. Why?

- Janine is 41 weeks pregnant, and the mild contractions she has been experiencing "for days" have dilated her cervix to 2 cm.
  These facts suggest that she is in labor, but that the labor is not progressing appropriately.
  Pitocin is a pharmaceutical preparation of synthetic prostaglandins and oxytocin, which will increase the frequency and strength of her contractions and help her labor to progress to birth.

4.1.12. Describe how the newborn's first breath alters the circulatory patt...

Author: OpenStax College

Describe how the newborn's first breath alters the circulatory pattern.

- The first breath inflates the lungs, which drops blood pressure throughout the pulmonary system, as well as in the right atrium and ventricle.
  In response to this pressure change, the flow of blood temporarily reverses direction through the foramen ovale, moving from the left to the right atrium, and blocking the shunt with two flaps of tissue. The increased oxygen concentration also constricts the ductus arteriosus, ensuring that these shunts no longer prevent blood from reaching the lungs to be oxygenated.

Check the answer of this question online at QuizOver.com:
Question: Describe how the newborn's first breath OpenStax College Anatomy

4.1.13. Why newborns are at much higher risk for dehydration than adults?

Author: OpenStax College

Why newborns are at much higher risk for dehydration than adults?

- The newborn's kidneys are immature and inefficient at concentrating urine. Therefore, newborns produce very dilute urine-in a sense, wasting fluid.
  This increases their risk for dehydration, and makes it critical that caregivers provide newborns with enough fluid, especially during bouts of vomiting or diarrhea.

4.1.14. Describe the transit of breast milk from lactocytes to nipple pores.

Author: OpenStax College

Describe the transit of breast milk from lactocytes to nipple pores.

- Milk is secreted by lactocytes into alveoli. Suckling stimulates the contraction of myoepithelial cells that squeeze milk into lactiferous ducts.
  It then collects in lactiferous sinuses and is secreted through the nipple pores.

Check the answer of this question online at QuizOver.com:
Question: Describe the transit of breast milk from OpenStax College Anatomy

4.1.15. A woman who stopped breastfeeding suddenly is experiencing breast e...

Author: OpenStax College

A woman who stopped breastfeeding suddenly is experiencing breast engorgement and leakage, just like she did in the first few weeks of breastfeeding. Why?

- It takes time to establish a balance between milk supply and milk demand.
  When breastfeeding stops abruptly, it takes time for the supply to fall. Excessive milk supply creates breast engorgement and leakage.

Check the answer of this question online at QuizOver.com:
Question: A woman who stopped breastfeeding suddenly OpenStax College Anatomy

4.1.16. Explain why it was essential that Mendel perform his crosses using ...

Author: OpenStax College

Explain why it was essential that Mendel perform his crosses using a large sample size?

- By using large sample sizes, Mendel minimized the effect of random variability resulting from chance. This allowed him to identify true ratios corresponding to dominant-recessive inheritance.

4.1.17. How can a female carrier of an X-linked recessive disorder have a d...

Author: OpenStax College

How can a female carrier of an X-linked recessive disorder have a daughter who is affected?

- The only way an affected daughter could be born is if the female carrier mated with a male who was affected. In this case, 50 percent of the daughters would be affected. Alternatively, but exceedingly unlikely, the daughter could become affected by a spontaneous mutation.