

## Embryology Quiz Answer Key PDF

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**Which germ layer gives rise to the central nervous system?**

- A. Ectoderm ✓**
- B. Mesoderm
- C. Endoderm
- D. trophoblast

**Who is known for discovering the mammalian egg?**

- A. Aristotle
- B. Karl Ernst von Baer ✓**
- C. Hans Spemann
- D. Gregor Mendel

**Explain the significance of the neural tube in embryonic development.**

**The neural tube is the precursor to the central nervous system, which includes the brain and spinal cord. Its proper formation is crucial for the development of these structures.**

**Describe the process of implantation and its importance in pregnancy.**

**Implantation is the attachment of the blastocyst to the uterine wall, essential for establishing a nutrient supply from the mother to the developing embryo.**

**Discuss the role of teratogens in embryonic development and provide examples.**

**Teratogens are substances that can cause congenital anomalies or birth defects. Examples include alcohol, certain drugs, and infections like rubella.**

**What are the main differences between spermatogenesis and oogenesis?**

Spermatogenesis produces four viable sperm cells from each precursor cell, occurs continuously, and throughout a male's life. Oogenesis produces one viable egg and polar bodies, occurs cyclically, and is limited to a female's reproductive years.

**How does comparative embryology provide insights into evolutionary biology?**

Comparative embryology studies similarities and differences in embryonic development across species, revealing evolutionary relationships and common ancestry.

**Outline the ethical concerns associated with the use of embryonic stem cells in research.**

Ethical concerns include the moral status of embryos, potential for exploitation, and the balance between scientific advancement and respect for human life.

**Which structures are part of the placenta? (Select all that apply)**

- A. Chorionic villi** ✓
- B. Amniotic sac
- C. Umbilical cord** ✓
- D. Yolk sac

**Which processes are involved in fertilization? (Select all that apply)**

- A. Capacitation** ✓
- B. Acrosome reaction** ✓
- C. Mitosis
- D. Cortical reaction** ✓

**What is the term for the movement of cells to form the three primary germ layers?**

- A. Fertilization
- B. Implantation
- C. Gastrulation** ✓
- D. Cleavage

**Which process involves the rapid cell division of the zygote without growth?**

- A. Neurulation
- B. Cleavage ✓**
- C. Gastrulation
- D. Organogenesis

**What is the primary function of the placenta?**

- A. Produce gametes
- B. Facilitate nutrient and gas exchange ✓**
- C. Protect the embryo from infections
- D. Initiate labor

**Which germ layers are formed during gastrulation? (Select all that apply)**

- A. Ectoderm ✓**
- B. Mesoderm ✓**
- C. Endoderm ✓**
- D. Epidermis

**Which of the following is a known teratogen?**

- A. Vitamin C
- B. Alcohol ✓**
- C. Water
- D. Oxygen

**Which of the following are stages of early embryonic development? (Select all that apply)**

- A. Zygote ✓**
- B. Blastula ✓**
- C. Neurula
- D. Gastrula ✓**

**Where does fertilization typically occur in the human body?**

- A. Uterus
- B. Ovaries
- C. Fallopian tubes ✓**
- D. Cervix

**Which of the following are ethical considerations in embryonic research? (Select all that apply)**

- A. Use of embryonic stem cells ✓**
- B. Genetic modification ✓**
- C. In vitro fertilization
- D. Cloning ✓**

**Which stage of embryonic development immediately follows fertilization?**

- A. Blastula
- B. Zygote ✓**
- C. Gastrula
- D. Fetus

**Which systems develop during organogenesis? (Select all that apply)**

- A. Cardiovascular ✓**
- B. Respiratory ✓**
- C. Digestiv ✓**
- D. Endocrine ✓**