

Developmental Biology and Physiology

Developmental Psychology · Answer Key · 18 Questions

1. At what stage of prenatal development does the human heart typically begin to beat?

- A) Weeks 3-4**
- B) Weeks 8-9
- C) Weeks 12-14
- D) Week 20

2. Which bone in the human body is the last to complete ossification, typically occurring in the mid-twenties?

- A) Femur
- B) Clavicle**
- C) Sternum
- D) Patella

3. What is the primary factor responsible for the 'growth spurt' observed during early adolescence?

- A) Increased sleep duration
- B) Release of growth hormone and sex steroids**
- C) High protein intake
- D) Increased physical activity

4. Which part of the brain is the last to reach full structural maturity in humans, often not until the mid-twenties?

- A) Amygdala
- B) Cerebellum
- C) Prefrontal cortex**
- D) Hippocampus

5. What is the medical term for the programmed cell death that helps shape human digits during embryonic development?

- A) Mitosis
- B) Apoptosis**
- C) Meiosis
- D) Necrosis

6. During which decade of life does human muscle mass (sarcopenia) typically begin to naturally decline in sedentary individuals?

A) 20s

B) 30s

C) 50s

D) 70s

7. What is the primary source of nutrition for the human fetus during the first trimester?

A) Maternal blood direct infusion

B) The yolk sac

C) Placental transfer

D) Amniotic fluid absorption

8. The fontanelles (soft spots) in a human infant's skull typically close completely by what age?

A) 3-6 months

B) 9-12 months

C) 18-24 months

D) 3-4 years

9. Which hormone is predominantly responsible for the development of secondary sexual characteristics in females?

A) Testosterone

B) Estrogen

C) Progesterone

D) Cortisol

10. What is the approximate age at which the human brain reaches about 90% of its adult volume?

A) Age 2

B) Age 5

C) Age 10

D) Age 16

11. What is the function of the myelin sheath in the developing nervous system?

A) To produce neurotransmitters

B) To increase the speed of nerve impulse conduction

C) To anchor neurons in the cortex

D) To protect the brain from toxins

12. At what developmental stage does the 'palmar grasp reflex' typically disappear in infants?

- A) 1 month
- B) 4-6 months**
- C) 1 year
- D) 2 years

13. What is the main physiological cause of menopause in the female reproductive system?

- A) Uterine atrophy
- B) Depletion of ovarian follicles**
- C) Decrease in pituitary function
- D) Hypothalamic shutdown

14. During fetal development, which organ is the last to reach full functional maturity?

- A) Heart
- B) Liver
- C) Lungs**
- D) Kidneys

15. The loss of skin elasticity in older adults is primarily due to the breakdown of which structural protein?

- A) Keratin
- B) Collagen**
- C) Myosin
- D) Actin

16. What happens to the human lens of the eye as part of the normal aging process?

- A) It becomes more flexible
- B) It loses transparency and elasticity (presbyopia)**
- C) It increases in refractive power
- D) It shifts color to blue

17. Which type of fat, which helps with thermoregulation, is prominent in newborns but decreases significantly with age?

- A) White adipose tissue
- B) Brown adipose tissue**
- C) Visceral fat
- D) Subcutaneous fat

18. By the end of the first year of life, a human infant's birth weight typically:

A) Doubles

B) Triples

C) Quadruples

D) Increases by 50%