Chapter 40 Exercises

Review Questions

1. Which form of reproduction is thought to be best in a stable environment?
a. asexual **c.** budding
b. sexual **d.** parthenogenesis

2. Which form of reproduction can result from damage to the original animal?
a. asexual **c.** budding
b. fragmentation **d.** parthenogenesis

3. Which form of reproduction is useful to an animal with little mobility that reproduces sexually?
a. fission **c.** parthenogenesis
b. budding **d.** hermaphroditism

4. Genetically unique individuals are produced through _____.
a. sexual reproduction **c.** budding
b. parthenogenesis **d.** fragmentation

5. External fertilization occurs in which type of environment?
a. aquatic **c.** savanna
b. forested **d.** steppe

6. Which term applies to egg development within the female with nourishment derived from a yolk?
a. oviparity **c.** ovoviviparity
b. viviparity **d.** all of these

7. Which term applies to egg development outside the female with nourishment derived from a yolk?
a. oviparity **c.** ovoviviparity
b. viviparity **d.** all of these

8. Sperm are produced in the _____.
a. scrotum **c.** seminiferous tubules
b. seminal vesicles **d.** prostate gland

9. The bulk of semen is made by the _____.
a. scrotum **c.** seminiferous tubules
b. seminal vesicles **d.** prostate gland

10. Which of the following cells in spermatogenesis is diploid?
a. primary spermatocyte **c.** spermatid
b. secondary spermatocyte **d.** sperm

11. Which organ has the same embryonic origin as the penis?
a. clitoris **c.** greater vestibular glands
b. labia majora **d.** vagina

12. Which organ has an endometrial lining that will support a developing baby?
a. labia minora **c.** ovaries
b. breast **d.** uterus

13. How many eggs are produced as a result of one meiotic series of cell divisions?
a. one **c.** three
b. two **d.** four

14. Which hormone causes Leydig cells to make testosterone?
a. FSH **c.** inhibin
b. LH **d.** estrogen

15. Which hormone causes FSH and LH to be released?
a. testosterone
b. estrogen
c. GnRH
d. progesterone

16. Which hormone signals ovulation?
a. FSH
b. LH
c. inhibin
d. estrogen

17. Which hormone causes the regrowth of the endometrial lining of the uterus?
a. testosterone
b. estrogen
c. GnRH
d. progesterone

18. Nutrient and waste requirements for the developing fetus are handled during the first few weeks by _____.
a. the placenta
b. diffusion through the endometrium
c. the chorion
d. the blastocyst

19. Progesterone is made during the third trimester by the _____.
a. placenta
b. endometrial lining
c. chorion
d. corpus luteum

20. Which contraceptive method is 100% effective at preventing pregnancy?
a. condom
b. oral hormonal methods
c. sterilization
d. abstinence

21. Which type of short-term contraceptive method is generally more effective than others?
a. barrier
b. hormonal
c. natural family planning
d. withdrawal

22. Which hormone is primarily responsible for the contractions during labor?
a. oxytocin
b. estrogen
c. β-HCG
d. progesterone

23. Major organs begin to develop during which part of human gestation?
a. fertilization
b. first trimester
c. second trimester
d. third trimester

24. Which of the following is *false*?
a. The endoderm, mesoderm, and ectoderm are germ layers.
b. The trophoblast is a germ layer.
c. The inner cell mass is a source of embryonic stem cells.
d. The blastula is often a hollow ball of cells.

25. During cleavage, the mass of cells _____.
a. increases
b. decreases
c. doubles with every cell division
d. does not change significantly

26. Which of the following gives rise to the skin cells?
a. ectoderm
b. endoderm
c. mesoderm
d. none of these

27. The ribs form from the _____.
a. notochord
b. neural plate
c. neural tube
d. somites

Critical Thinking Questions

28. Why is sexual reproduction useful if only half the animals can produce offspring, and two separate cells must be combined to form a third?

29. What determines the sex in the offspring of birds and mammals?

30. What are the advantages and disadvantages of external and internal forms of fertilization?

31. Why would paired external fertilization be preferable to group spawning?

32. Describe the phases of the human sexual response.

33. Compare spermatogenesis and oogenesis as to timing of the processes and the number and types of cells finally produced.

34. If male reproductive pathways are not cyclical, how are they controlled?

35. Describe the events in the ovarian cycle leading up to ovulation.

36. Describe the major developments during each trimester of human gestation.

37. Describe the stages of labor.

38. What do you think would happen if multiple sperm fused with one egg?

39. Why do mammalian eggs have a small concentration of yolk, while bird and reptile eggs have a large concentration of yolk?

40. Explain how the different germ layers give rise to different tissue types.

41. Explain the role of axis formation in development.