Reproduction + Development- Qs. bank

Multiple Choice
Identify the choice that best completes the statement or answers the question.

____ 1. During which stage of growth do humans begin to crawl and walk?
a. infancy
b. childhood
c. adolescence
d. none of these

____ 2. _____ is the first two years of a human's life.
a. Childhood
b. Adulthood
c. Adolescence
d. Infancy

____ 3. The menstrual cycle begins during _____.
a. puberty
b. adulthood
c. childhood
d. infancy

____ 4. During which stage of birth does the cervix open?
a. dilation
b. expulsion
c. afterbirth
d. none of these

____ 5. The remains of the placenta and embryonic membranes that are expelled during birth are called the _____.
a. cervix
b. amniotic fluid
c. afterbirth
d. umbilical cord

____ 6. _____ is the process by which a baby is pushed out of the uterus and passes out of the mother's body.
a. Dilation
b. Expulsion
c. Labor
d. Birth

____ 7. Females stop releasing eggs and hormone secretions slow during _____.
a. puberty
b. ovulation
c. menopause
d. fertilization

____ 8. In the menstrual cycle, on what day does the flow stage begin?
a. day 14
b. day 1
c. day 28
d. day 5

____ 9. All the body systems of the fetus by the _____ have been formed.
a. third week
b. sixth week
c. eighth week
d. first month

____ 10. In the female, FSH stimulates the _____.
a. production of eggs
b. production of progesterone
c. blastocyst
d. development of a follicle in the ovary

____ 11. When FSH reaches the testes, it causes the production of _____.
a. testosterone
b. LH
c. sperm cells
d. secondary sex characteristics

____ 12. The fluid that provides energy for the sperm cells comes from the _____.
a. bulbourethral glands
b. seminal vesicles
c. prostate gland
d. urethra

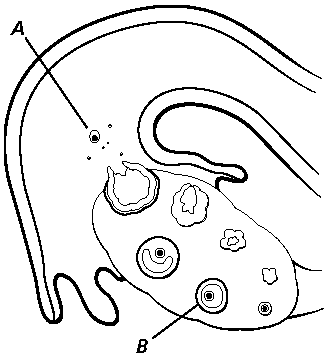


Figure 38-3

____ 13. What stage of the menstrual cycle is characterized by the event labeled A in Figure 38-3?
a. corpus luteum formation
b. fertilization
c. flow
d. ovulation

____ 14. When did the structure labeled B in Figure 38-3 start to form?
a. before birth
b. in infancy
c. at puberty
d. at the start of the menstrual cycle

Matching

Match each item with the correct statement below.

a. pituitary
b. puberty
c. labor
d. follicle
e. implantation
f. semen
g. umbilical cord
h. epididymis

____ 15. Gland that secretes hormones that influence many physiological processes of the body
____ 16. Ropelike structure that attaches the embryo to the wall of the uterus
____ 17. Attachment of the blastocyst to the lining of the uterus
____ 18. Refers to the time when secondary sex characteristics begin to develop
____ 19. Combination of sperm and fluids in which they are transported
____ 20. Group of epithelial cells that surround an undeveloped egg
____ 21. physiological and physical changes a female goes through to give birth
____ 22. a coiled tube within the scrotum in which sperm complete their maturation

Short Answer

23. Compare and contrast *epididymis* and *vas deferens.*
24. Compare and contrast *bulbourethral gland* and *prostate gland.*
25. Why do labor contractions continue after the birth of a child?
26. When does a human develop most rapidly? Explain why.
27. What happens if LH does not increase in the menstrual cycle around day 14?
28. Why is a woman with blocked oviducts unable to become pregnant?
29. What happens if, at birth, the testes do not move down into the scrotum?

30. What is the function of the corpus luteum?

31. What happens to the lining of the uterus if fertilization does not occur?

32. Why is the scrotum located outside the male body?

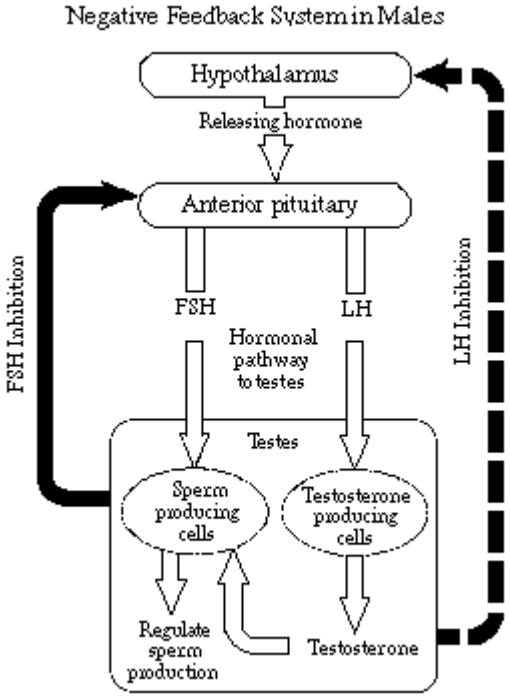


Figure 38-2

33. Cells that produce sperm send signals to the pituitary and hypothalamus to stop releasing _____. Refer to Figure 38-2.

34. An increase of testosterone inhibits _____ production. Refer to Figure 38-2.

35. _____ and testosterone affect sperm production. Refer to Figure 38-2.

36. LH stimulates the production of _____. Refer to Figure 38-2.

37. The release of LH by the anterior pituitary is stimulated by a hormone secreted by the _____. Refer to Figure 38-2.

38. Two groups of married women, about the same age and weight, participated in a test. The women in Group A were given a placebo, a sugar pill, each morning of their menstrual cycle. The women in Group B were given a pill containing estrogen and progesterone each morning of their menstrual cycle. The LH levels before, during, and after ovulation of both groups were recorded. The number of pregnancies during the year of the test in Group A was 25 times the number of pregnancies in Group B. What would you conclude, based on these data shown in Table 38-1?

Group	Four Days Before	Day of Ovulation	Four Days After
A	17 mg/100 mL	299 mg/100 mL	16 mg/100 mL
B	20 mg/100 mL	156 mg/100 mL	14 mg/100 mL

Table 38-1

39. Why would an ectopic fetus have to be delivered by a cesarean section, not by a normal birth?

40. How could it happen that implantation could take place in the pelvic cavity? What must happen for the fetus to be nourished there?

41. Although the incidence is less than one percent, an ectopic pregnancy may occur, in which the implantation takes place in an oviduct or in the pelvic cavity. When would implantation in the oviduct be fatal for the developing fetus?

Problem

42. Label the diagram in Figure 38-1. Use these choices: ovary, implantation, blastocyst, ovulation, fertilization, uterus, zygote, vagina, oviduct.

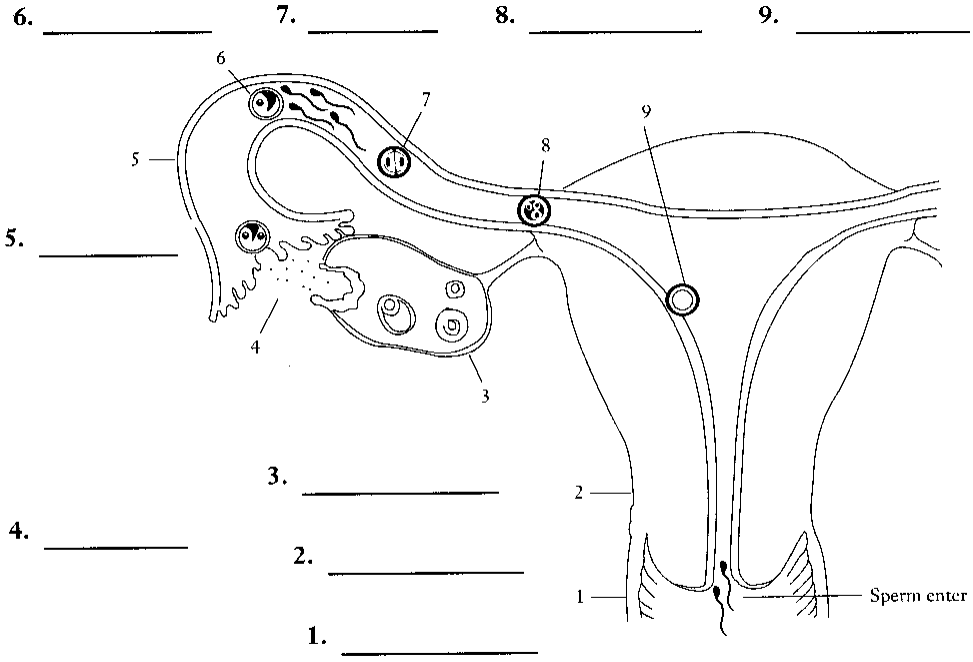


Figure 38-1

The Smiths would like to have a baby. Mrs. Smith has begun to keep a record of her temperature readings during her menstrual cycle. She knows that she is fertile, or capable of beginning pregnancy, only for a period of about 24 hours from the time of ovulation. She also knows that her temperature rises about 0.3ºC when she ovulates. She keeps a record of her temperature every day at the same time. Mr. Smith is away for National Guard duty on March 19 and 20, April 16 and 17, May 21 and 22, and June 18 and 19. Use the temperature chart in Table 38-1 to find out when Mrs. Smith has the best opportunity of becoming pregnant. (Note that sperm are able to survive inside the oviducts and uterus for several days.)

month/date	temperature	month/date	temperature
March 19	36.7º C	May 14	36.6º C
March 20	37.0º C	May 15	36.9º C
March 21	37.0º C	May 16	37.0º C
April 16	36.7º C	June 11	36.7º C

April 17	37.0º C	June 12	37.0º C
April 18	37.0º C	June 13	37.0º C

Table 38-2

43. Some researchers have noted slight physical variations in X and Y sperm. They postulate that because Y sperm are lighter than X sperm, the Y sperm travel more quickly. Hypothesize how this may affect the sex of the Smiths' baby, providing reasons on which your hypothesis is based. You may refer to Table 38-2.
44. What if the Smiths waited until the day after ovulation to try for their baby? How might this affect the sex of their baby? Use Table 38-2.
45. Would changing Mr. Smith's National Guard weekend to the second Saturday of every month have helped the Smiths in their efforts to have a baby? Use Table 38-2 to determine your answer.
46. Based on Table 38-2, during which month or months do the Smiths have the best chance of producing a baby?

47. In humans, which meiotic phase has the longest duration?

Anaphase I in females
Prophase II in males
Prophase I in females
Metaphase II in females

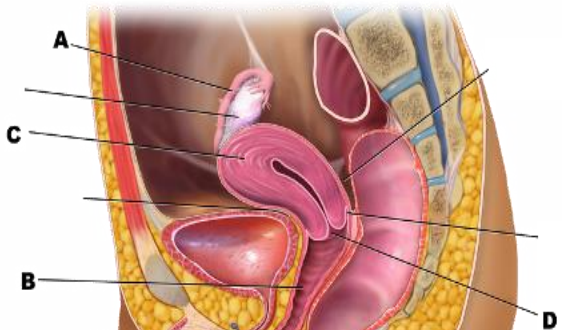
48. What is the correct trajectory of sperms

Ejaculatory duct, epididymis, vas deferens, ampulla of vas deferens, urethra
Epididymis, ejaculatory duct, ampulla of vas deferens, vas deferens, urethra
Epididymis, vas deferens, ampulla of vas deferens, ejaculatory duct, urethra
Vas deferens, ejaculatory duct, ampulla of vas deferens, urethra

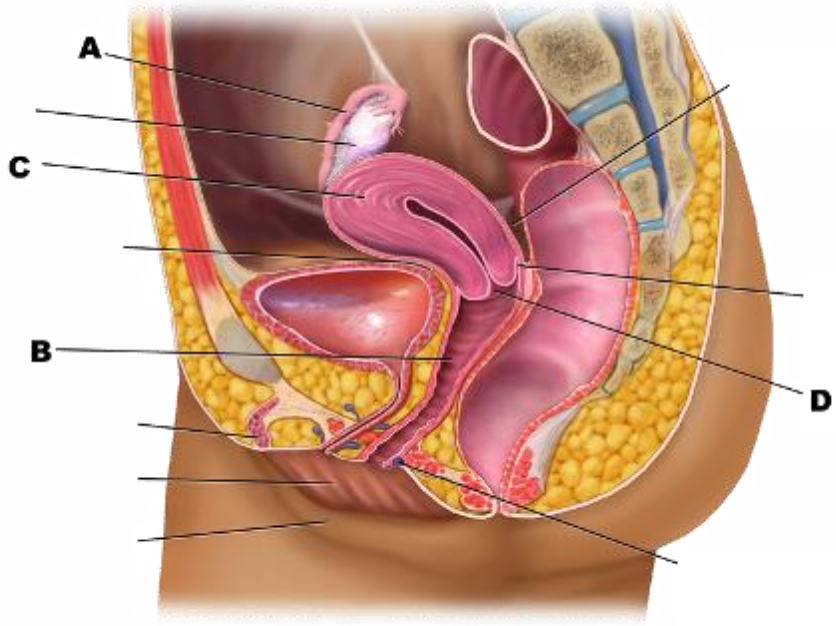
49. Which impairment in the male reproductive system will NOT necessarily lead to sterility?

Obstruction of bulbourethral glands
Blockage of the ampulla of vas deferens
Degeneration of epididymis
Prostatic cancer

50. An ectopic pregnancy is a pregnancy that occurs outside the womb. Considering the normal trajectory of the egg after ovulation, which structure in the picture below is more likely to undergo zygote implantation in an ectopic pregnancy.



51. Which structure in the figure below sheds during menstruation? What is the name of tissue that creates the menses?



The Female Reproductive System

The structure is C. Myometrium
The structure is B. Endometrium
The structure is B. Myometrium
The structure is C. Endometrium

52. What is spermiogenesis?

A process happening in the spermatic cord.
Shedding of unnecessary cytoplasm.
The process of meiosis in males.
Selection of spermatogonia to become sperm.

53. How many chromatids and chromosomes should one expect to find in a secondary spermatocyte in a human?

A. 46 chromatids, 46 chromosomes
B. 23 chromatids, 23 chromosomes
C. 92 chromatids, 46 chromosomes
D. 46 chromatids, 23 chromosomes

54. Which penile tissues remain pliable during an erection? Which tissues become firm? What is the function of the pliable tissues?

A. Corpus spongiosum; corpora cavernosa; sustain the erection.
B. Corpora cavernosa; corpus spongiosum; secrete seminal fluid.
C. Corpora cavernosa; corpus spongiosum; contract the testis during ejaculation.
D. Corpus spongiosum; corpora cavernosa; maintain the urethra open

55. What would be a direct result of an enzymatic deficiency on the acrosome?

A. Egg would not complete metaphase II
B. Primary spermatocyte would not become secondary spermatocyte
C. Implantation may occur in uterine tube
D. Spermatid would not become primary spermatocyte

56. Which structure is likely to be immediately affected due to spread of an infection in the cervical canal?

A. Fallopian tube
B. Fornix
C. Clitoris
D. Fimbriae

57. During pregnancy hormones are responsible for maintaining pregnancy. What kind of hormonal imbalances can lead to miscarriages during pregnancy?

A. Increasing levels of estrogen
B. Stimulation of progesterone secretory tissues
C. Decreasing levels of oxytocin
D. Early degeneration of corpus luteum

58. Which structures are responsible for maintaining levels of estrogen earlier and later in pregnancy?

A. Placenta earlier and ovaries later
B. Placenta earlier and umbilical cord later
C. Corpus luteum earlier and placenta later
D. Uterus earlier and ovaries later

59. What would NOT be a side effect of a drug that hypo-stimulates the Leydig (interstitial) cells on a pubertal human?

A. Increased secretion of GnRH (gonadotropin-releasing hormone) by hypothalamus
B. Increased secretion of FSH (follicle stimulating hormone) by anterior pituitary
C. Decreased secretion of GnRH (gonadotropin-releasing hormone) by hypothalamus
D. Increased secretion of LH (luteinizing hormone) by anterior pituitary

60. Which hormonal change is linked with the menses period of uterine cycle?

A. Increased secretion of progesterone by the corpus luteum
B. Decreased levels of progesterone and estrogen
C. Increased levels of follicle stimulating hormone and luteinizing hormone
D. Increased secretion of estrogen

61. Which hormone is consistently positively correlated with thickening of the endometrium?

A. Progesterone
B. Estrogen
C. Luteinizing hormone
D. Follicle-stimulating hormone

62. Which hormonal supplementation therapy is the least likely to assist a female that has difficulties ovulating?

A. Luteinizing hormone
B. Follicle stimulating hormone
C. progesterone
D. Estrogen

63. Which cells and their specific cell adhesion structures prevent antibodies from binding with sperm?

A. Interstitial cells' desmosomes
B. Spermatogonia's gap junctions
C. Spermatocyte's tight junctions
D. Sertoli cells' tight junctions

64. What is the correct trajectory of sperm from site of seminiferous tubules to spongy urethra?

A. Rete testis, efferent ductules, straight tubules, vas deferens, epididymis ductus, ejaculatory duct, prostatic urethra, membranous urethra
B. Rete testis, straight tubules, efferent ductules, vas deferens, epididymis ductus, ejaculatory duct, membranous urethra, prostatic urethra
C. Straight tubules, efferent ductules, straight tubules, vas deferens, epididymis ductus, ejaculatory duct, prostatic urethra, membranous urethra
D. Straight tubules, rete testis, efferent ductules, epididymis ductus, vas deferens, ejaculatory duct, prostatic urethra, membranous urethra

65. During human meiosis and fertilization which cells are diploid?

A. Primary spermatocyte, primary oocyte, and zygote.
B. oogonia, spermatid, egg.
C. Secondary oocyte, secondary spermatocyte, second polar body.
D. Secondary polar body, embryo, spermatogonia.

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Answer Section

1. A
2. D
3. A
4. A
5. C
6. C
7. C
8. B
9. C
10. D
11. C
12. B
13. D
14. A
15. A
16. G
17. E
18. B
19. F
20. D
21. C
22. H

SHORT ANSWER

23. ANS:
The epididymis is a coiled tube within the scrotum in which the sperm complete their maturation. The vas deferens is the duct that transports sperm from the epididymis toward the ejaculatory ducts and the urethra.

PTS: 1 DIF: B OBJ: 38-1 NAT: UCP1 | UCP5 | C5

24. ANS:
Both are glands that secrete alkaline fluids in which sperm are transported. The bulbourethral gland produces a sticky fluid that neutralizes the acidic environment of the urethra. The prostate gland secretes a thinner fluid that helps the sperm move and survive.

PTS: 1 DIF: B OBJ: 38-1 NAT: UCP1 | UCP5 | C5

25. ANS:
Labor contractions continue in order to expel the placenta and embryonic membranes from the mother.

PTS: 1 DIF: A OBJ: 38-6 NAT: A1 | E1 | E2

26. ANS:
A human develops most rapidly before birth. All body systems are fully formed before birth. Mass and length increase greatly.

PTS: 1 DIF: A OBJ: 38-5 NAT: C1 | C5 | C6

27. ANS:
If LH does not increase, ovulation does not occur.

PTS: 1 DIF: A OBJ: 38-3 NAT: C1 | C5 | F1

28. ANS:
The sperm cannot reach the egg to fertilize it through a blocked oviduct. The egg, even if fertilized, could not reach the uterus through a blocked oviduct.

PTS: 1 DIF: A OBJ: 38-1 NAT: UCP1 | UCP5 | C5

29. ANS:
If the testes do not descend into the scrotum, sperm cannot develop or survive and sterility results.

PTS: 1 DIF: A OBJ: 38-1 NAT: UCP1 | UCP5 | C5

30. ANS:
It produces both progesterone and estrogen. The progesterone causes the uterine lining to thicken, to increase its blood supply, and to accumulate fat and tissue fluid in preparation for the arrival of a fertilized egg.

PTS: 1 DIF: B OBJ: 38-3 NAT: C1 | C5 | F1

31. ANS:
The lining deteriorates and begins to be shed.

PTS: 1 DIF: B OBJ: 38-3 NAT: C1 | C5 | F1

32. ANS:
Sperm can develop only in a temperature that is about 3ºC lower than normal body temperature.

PTS: 1 DIF: B OBJ: 38-1 NAT: UCP1 | UCP5 | C5

33. ANS:
FSH

PTS: 1 DIF: B OBJ: 38-2 NAT: C1 | C5 | F1

34. ANS:
LH

PTS: 1 DIF: B OBJ: 38-2 NAT: C1 | C5 | F1

35. ANS:
FSH

PTS: 1 DIF: B OBJ: 38-2 NAT: C1 | C5 | F1

36. ANS:
testosterone

PTS: 1 DIF: B OBJ: 38-2 NAT: C1 | C5 | F1

37. ANS:
hypothalamus

PTS: 1 DIF: B OBJ: 38-2 NAT: C1 | C5 | F1

38. ANS:
Taking estrogen and progesterone in addition to that supplied by the body upsets the luteal phase and prevents the normal preparation of the uterus for implantation.

PTS: 1 DIF: A OBJ: 38-3 NAT: C1 | C5 | F1

39. ANS:
There is no normal birth canal through which the baby could be expelled from the pelvic cavity.

PTS: 1 DIF: A OBJ: 38-5 NAT: C1 | C5 | C6

40. ANS:
Because the oviducts open into the pelvic cavity, a fertilized egg may fall into the cavity, or an egg may be fertilized there. After implantation, the embryonic membranes and the placenta would have to develop there to transport oxygen and nutrients to the fetus.

PTS: 1 DIF: A OBJ: 38-4 NAT: C3

41. ANS:
As the fetus begins to grow, the oviduct would not be able to accommodate its size, and the fetus would probably die from lack of oxygen.

PTS: 1 DIF: A OBJ: 38-4 NAT: C3

PROBLEM

42. ANS:
1. Vagina, 2. Uterus, 3. Ovary, 4. Ovulation, 5. Oviduct, 6. Fertilization, 7. Zygote, 8. Blastocyst, 9. Implantation

PTS: 1 DIF: B OBJ: 38-1 NAT: UCP1 | UCP5 | C5

43. ANS:
If the egg is fertilized on the day of ovulation, there is a greater probability that the sperm will be a Y sperm because they swim more rapidly than X sperm. An egg fertilized by a Y sperm will be a boy.

PTS: 1 DIF: A OBJ: 38-3 NAT: C1 | C5 | F1

44. ANS:
There would be an equal chance that they would have either a boy or a girl because sperm can survive for a few days. Both X and Y sperm have had enough time to reach the egg.

PTS: 1 DIF: A OBJ: 38-3 NAT: C1 | C5 | F1

45. ANS:
The change would have helped in March and April. In May and June, there would be a problem.

PTS: 1 DIF: A OBJ: 38-3 NAT: C1 | C5 | F1

46. ANS:
When Mrs. Smith ovulates in May and June, Mr. Smith is at home. During these months, Mrs. Smith may have the best chances of becoming pregnant. In March and April, there is less of a chance because Mr. Smith is away on the day of ovulation; however, because sperm can survive for several days, fertilization may still take place.

PTS: 1 DIF: A OBJ: 38-3 NAT: C1 | C5 | F1

47. C
48. C
49. A
50. A
51. D
52. B
53. D
54. D
55. A
56. B
57. D
58. C
59. C
60. B
61. A
62. C
63. D
64. D
65. A

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