

Study Guide Answer Key

chapter

2

Learning Activities

1. Puberty
2. a. 10, 16
b. penis, testes
3. a. breast development
b. 2–2.5
4. a. Boys: taller; more muscular; pubic, axillary, chest, and facial hair; deeper voice
b. Girls: broader hips; breast development; pubic and axillary hair
5. c, f, h, b, g, e, a, d
6. See Figure 2-1 on p. 21.
7. a. seminiferous tubules
b. Leydig's cells
8. a. Increases muscle mass and strength
b. Promotes growth of long bones
c. Increases BMR
d. Enhances red blood cell production
e. Enlarges vocal cords
f. Encourages male distribution of body hair
9. See Figure 2-2 on p. 23.
10. g
l, q, r
p
d
c, h
i
k
j
f
m
o
a
b, e
n
11. See Figures 2-3 and 2-4 on pp. 23-24.
12. See Figure 2-6 on p. 26.
13. See Figure 2-7 on p. 27.
14. b, d, c, a
15. b, a, e, c, d
16. a. FSH (follicle-stimulating hormone) is produced in the anterior pituitary gland and stimulates the maturation of an ovarian follicle.

- b. LH (luteinizing hormone) is produced in the anterior pituitary gland and stimulates final maturation of the follicle and release of its ovum.
- c and d. Estrogen and progesterone are produced in the corpus luteum and cause buildup of the endometrium to nourish a fertilized ovum if it arrives. If no fertilized ovum arrives, the corpus luteum degenerates and levels of estrogen and progesterone fall, causing the next menstrual cycle.

Review Questions

1. Answer: 3
Rationale: Although the female growth spurt begins earlier than the male's, it also ends sooner, limiting the girl's mature height. Testosterone is the primary male hormone. Girls begin puberty earlier, but they end it sooner than boys. Onset of puberty initiates the growth spurt rather than stopping it. Estrogen and progesterone, which increase as the girl matures, eventually stop her growth in height.
2. Answer: 2
Rationale: Although most sperm are released in semen with ejaculation, some semen is often secreted before ejaculation and can fertilize a waiting ovum. Although ejaculation can occur at any time, the penis becomes flaccid after ejaculation, preventing penetration. Sperm are added to the seminal fluid by contractions of the vas deferens before ejaculation. Semen typically enters the urethra shortly before ejaculation.
3. Answer: 3
Rationale: The endometrium is the inner mucosal layer that responds to cyclic hormonal changes during the menstrual cycle and also receives the fertilized ovum when it implants. The parametrium is the outer serosal layer and the myometrium is the middle muscular layer.

4. Answer: 3
Rationale: The linea terminalis is at the level of the sacroiliac joint to the front iliopubic prominence (front of the pelvis). The obstetric conjugate is a diameter from the upper part of the symphysis pubis to the sacral promontory and is estimated from the diagonal conjugate because it cannot be directly measured. These diameters are measured at the inlet, but are not the dividing line of the true from the false pelvis. The bi-ischial is a diameter of the outlet, at the lower end of the true pelvis.
5. Answer: 3
Rationale: The anteroposterior diameter of the pelvic outlet can enlarge slightly during childbirth because the coccyx is moveable. The obstetric conjugate and the right and left oblique diameters are mostly surrounded by non-movable bone and are therefore less flexible.
6. Answer: 1
Rationale: Adequate sperm production requires a temperature slightly lower than the rest of the body. The scrotum is a skin pouch that allows the testes to be suspended slightly away from the body. The epididymis and vas deferens carry sperm from the testes to the urethra. The testes manufacture sperm and secrete testosterone. Contraction of muscles of the prostate gland and seminal vesicles contribute to the flow and motility of sperm and rhythmic contractions of penile erectile tissues aid in ejaculation.
7. Answer: 3
Rationale: Alveoli contain milk-secreting cells. Lactiferous ducts carry milk from the alveoli to the nipples. Montgomery's glands secrete a substance to lubricate and protect the nipple during breastfeeding. The nipple is at the center of each breast and is where milk is ejected through its pores.
8. Answer: 2
Rationale: Blood is trapped within the penis as penile arteries relax. It becomes engorged with blood and an erection occurs. Muscles attached to the penis do not contribute to erection. Testosterone levels play a part in the male sex act, but do not fall in response to stimulation. The prostate gland primarily functions to contribute its secretion to the seminal fluid.
9. Answer: 4
Rationale: Breast size is unrelated to the ability to produce milk because fatty tissues cause size differences. The number of alveoli is similar in women, regardless of whether their breasts are small or large. Hormones of pregnancy do cause growth in breast tissue, but this does not make the difference in a woman's ability to nurse.
10. Answer: 2
Rationale: The middle of the three muscle layers of the uterus has a figure-8 design. The circular muscles of the inner myometrium form sphincters where the fallopian tubes enter the uterus and at the internal opening of the cervix. Longitudinal muscles form the outer muscular layer and expel the infant during labor. Oblique muscles do not exist in the myometrium.
11. Answer: 4
Rationale: Much of the endometrium is shed during menstruation, and it is thinnest at the end of the menstrual period. The endometrium is thickest at ovulation, to prepare for a fertilized ovum. The endometrium remains thick if a fertilized ovum implants, but begins breaking down a few days after menstruation if none is present.

Thinking Critically

1. You can reassure your niece that early cycles are often irregular and the young girl often does not ovulate. Regular cycles are usually established within 6 months to 2 years of the first period.
2. The vagina normally cleanses itself and maintains a slightly acidic pH. Douching washes away these acidic secretions, and antibiotics can alter its self-cleansing activity. The nurse can explain these factors to the woman to discourage her from douching except when ordered by her health care practitioner.

Applying Knowledge

Answers will vary.