Biology 12 Name: _____

Reproductive System Per: _____ Date: _____

Chapter 14 – The Reproductive System

Complete using BC Biology 12, page 436 - 467

14. 1 Male Reproductive System pages 440 - 443

1. Distinguish between **gametes** and **gonads**, using specific examples. _____

_____

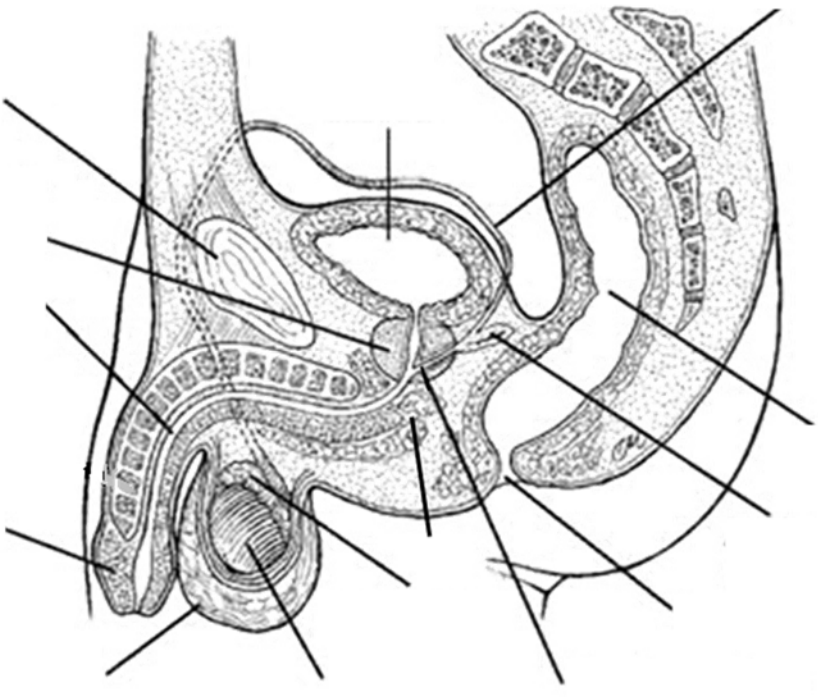
_____

2. What are the functions of the male reproductive structures?

Organ	Function
Testes	
Epididymides	
Vas deferens	
Seminal vesicles	
Prostate gland	
Urethra	
Cowper's gland	
Penis	

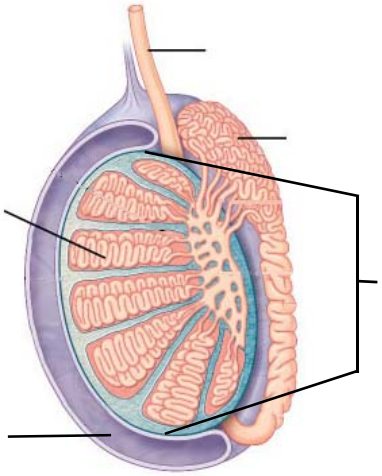
3. Label the diagram

A. anus
B. bladder (urinary)
C. bulbourethral gland
D. ejaculatory duct
E. epididymis
F. penis
G. prostate gland
H. pubic bone
I. rectum
J. scrotum
K. seminal vesicle
L. testes
M. urethra
N. vas deferens



4. What structure connects the vas deferens to the urethra? _____
5. The seminal fluid is composed of…
    a. _____ sugar (contributed by the _____)
        i. Purpose? _____
    b. _____ ions (HCO_3^-) (contributed by the _____)
        i. Purpose? _____
    c. _____ mucus-rich fluid (contributed by the _____)
        i. Purpose? _____
    d. _____ (also contributed by the _____)
        i. Purpose? _____
6. Approximately how many sperm are expelled during ejaculation? _____
7. Name the structure that holds the testes outside of the abdominal cavity. _____
    a. Why must the testes be held there? _____
8. **Sperm Production**: The testis is composed of compartments called _____, each of which contains one to three _____ which are the site of sperm production which is referred to as _____. Sperm go through a series of stages of development before becoming "mature" sperm (also known as _____) which are then stored in the _____ that surrounds the testis.

9. Label the diagram
    a. epididymis
    b. scrotal sac
    c. seminiferous tubules
    d. testis
    e. vas deferens



10. Draw a sperm cell and label the 5 main parts as described below.
    a. _____: production of ATP for the movement of the tail
    b. _____: contains the nucleus with _____ chromosomes
    c. _____: stores enzymes needed to penetrate the egg
    d. _____: propelling the sperm forward
    e. _____: continuation of the tail but lacks outer covering

11. **Hormone Regulation**: the hypothalamus has ultimate control of the testes function as it secretes a hormone called _____ (GnRH) which stimulates the anterior pituitary to secrete:
    a. _____ (FSH) that promotes the production of sperm in the seminiferous tubules and the release of _____ to stop FSH production
    b. _____ (LH) also known as _____ _____ (ICSH) that controls the production of the main male hormone _____.
12. Name several male characteristics caused by **testosterone**.
    a. Primary characteristic: development and functioning of male reproductive organs
    b. Secondary characteristics include:
        i. _____
        ii. _____
        iii. _____
        iv. _____
        v. _____

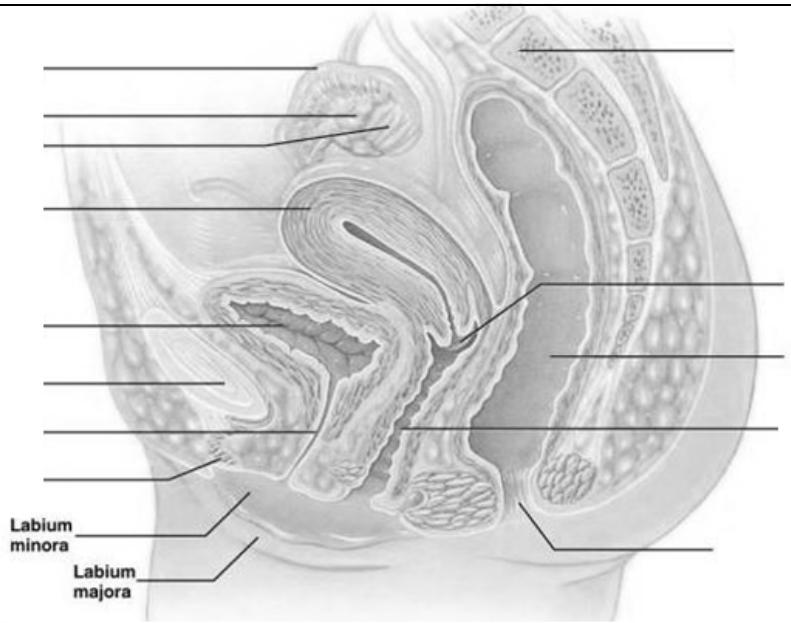
14.2 Female Reproductive System

pages 444 - 445

13. The female gonads are the _____. _____ is the production of an egg, or _____ (the female gamete) which are produced one per month (ovaries alternate). _____ is the process by which an egg is released from an ovary and enters the oviduct.
14. What are the functions of the female reproductive structures?

Organ	Function
Ovaries	
Oviducts	
Uterus	
Cervix	
Vagina	

15. Label the diagram
    A. anus
    B. cervix
    C. clitoris
    D. fimbriae
    E. ovary
    F. oviduct
    G. pubic bone
    H. rectum
    I. urinary bladder
    J. uterus
    K. vagina
    L. vertebral column

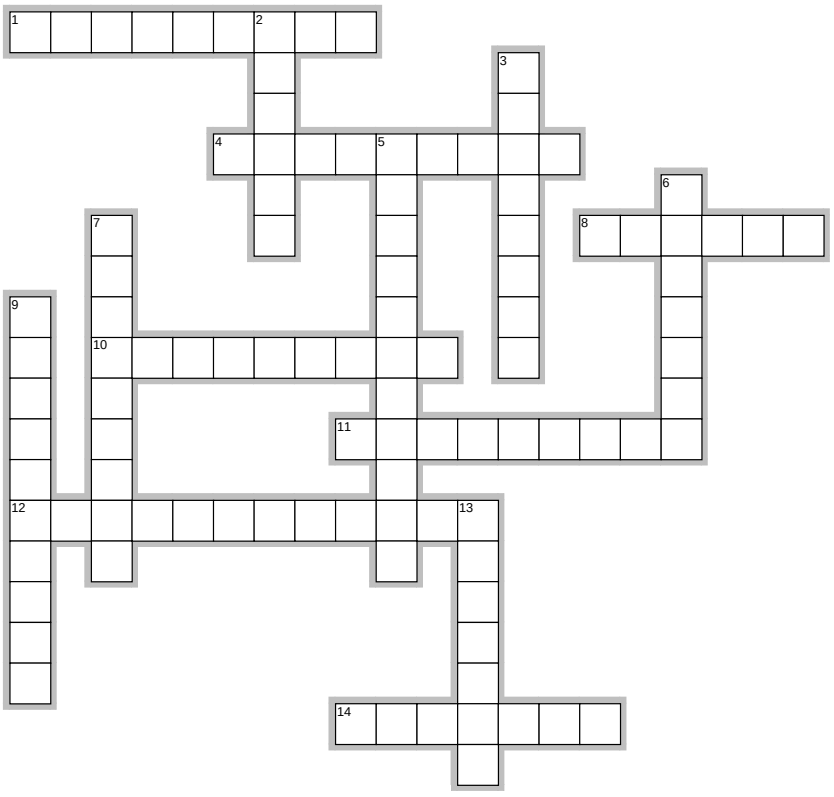


16. Since the ovaries are not directly attached how do the eggs get into the oviducts? _____
_____
_____
17. How is an egg propelled down the oviduct? _____
18. An embryo that embeds anywhere other than the uterine lining is referred to as an _____
_____.
19. The uterus is also called as the _____ which can begin at ____ cm wide and stretch to over _____ cm wide to accommodate a growing baby. The lining of the uterus, the _____, participates in the formation of the _____ which supplies the nutrients needed for embryonic and fetal development.
20. How does the male and female reproductive systems differ in regards to the urinary system? _____
_____
_____

14.3 Ovarian & Uterine Cycles pages 446 - 450

Ovarian Cycle

21. A female is born with all the ovarian follicles (and therefore eggs) she will ever have. How many…
    a. follicles are there on average? _____
    b. will mature? _____
    c. are released each month? _____
22. Complete the crossword



Across

1. Many of these are found in the outer layer of the ovary, each one contains an immature egg.
4. A secondary follicle becomes a _____ follicle which increases to the point the follicle wall balloons out on the surface of the ovary.
8. Outer layer of the ovary (or any structure).
10. Term referring to the bursting of the vesicular follicle and release of the secondary oocyte.
11. This is produced when the primary oocyte divides (2 words)
12. A gland like structure that produces progesterone; what remains of the vesicular follicle after ovulation.
14. The primary oocyte divides, producing two _____ cells.

Down

2. This phase occurs for the second half of the ovarian cycle.
3. Alternate name for the vesicular follicle.
5. An egg contains 23 of these.
6. A ___ follicle contains an oocyte and begins producing estrogen (first stage)
7. A primary follicle becomes a _____ follicle and produces estrogen and some progesterone.
9. The phase that occurs for the first half of the ovarian cycle.
13. Inner region of the ovary (or any structure)

23. Match the hormones to where they are produced (one will be used twice).

_____ gonadotropin-releasing hormone	A. mainly the follicle, some from the corpus luteum
_____ follicle-stimulating hormone	B. anterior pituitary gland
_____ luteinizing hormone	C. mainly the corpus luteum, some from the follicle
_____ estrogen	D. hypothalamus
_____ progesterone	

24. What happens to the corpus luteum? _____
    a. If a fertilized egg does not implant in the uterine lining, how long before the above occurs?

Uterine Cycle

25. The uterus undergoes a cyclical series of events known as the uterine cycle. The _____ day cycle is divided as follows (varies by individual):
    a. Days 1 – 5 _____
    b. Days 6 – 13 _____
    c. Day 14 _____
    d. Days 15 – 28 _____
26. Name several male characteristics caused by **estrogen** (and progesterone)
    a. Primary characteristic: development and functioning of female reproductive organs
    b. Secondary characteristics include:
        i. _____
        ii. _____
        iii. _____
        iv. _____
        v. _____
27. Why does the blood released during menstruation not clot? _____
    _____
28. What causes the cramps experienced during menstruation? _____

Fertilization, Pregnancy & Birth

29. Describe the process from fertilization to birth in point form. Include the terms **placenta**, **human chorionic gonadotropin (HCG)**, **uterine contractions**, and **oxytocin**.
    _____
    _____
    _____
    _____
    _____
    _____
    _____
    _____
    _____
    _____

30. Match the terms.

_____ lactation	A. period in which menstruation slows then stops
_____ colostrum	B. production of milk by mammary glands to feed newborn
_____ menopause	C. thin, yellow, milky liquid; rich in protein (including antibodies)

14.4 Disorders of the Reproductive System pages 450 - 455

31. Complete the table. Your knowledge of the disorders will not be tested but rather is provided for interest.

Disorder	Description
Disorders Affecting Male Reproductive System	
	Inability to produce or maintain an erection Affects estimated 50% for men aged 40 to 75
	Enlargement of the prostate gland
	Most commonly diagnosed cancer in Canadian males (1 in 7)
	Most common type of cancer in males aged 15 to 35
Disorders Affecting Female Reproductive System	
	Presence of endometrial-like tissue outside the uterine cavity
	Accounts for 4% of all women's cancers in Canada
	Extremely painful menstruation
	Fluid-filled sacs that develop on the ovaries
	Group of symptoms related to the menstrual cycle that can begin anytime from 2 weeks to a few days prior.

32. What are the most frequent causes of infertility in…

a. men? _____

b. women? _____

33. Name 5 types of **assisted reproductive technologies** (ART) that can increase chances of pregnancy.

a. _____

b. _____

c. _____

d. _____

e. _____

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____
21. _____
22. _____
23. _____
24. _____
25. _____
26. _____
27. _____
28. _____
29. _____
30. _____
31. _____
32. _____
33. _____

34. Identify the parts of the male reproductive system as described.

(1) _____
(2) _____
(3) _____
(4) _____
(5) _____
(6) _____
(7) _____
(8) _____
(9) _____
(10) _____

35. Identify the structure (write the name)

a. _____
b. _____
c. _____
d. _____
e. _____

38. _____

_____

39. _____

_____

44. _____

46. Complete the table

Hormone	**Source**	**Target**	**Action**
Testosterone			
FSH			
LH			
Estrogen			
Progesterone			

55. _____

Mark the review questions using the answer key on pages 552 - 554