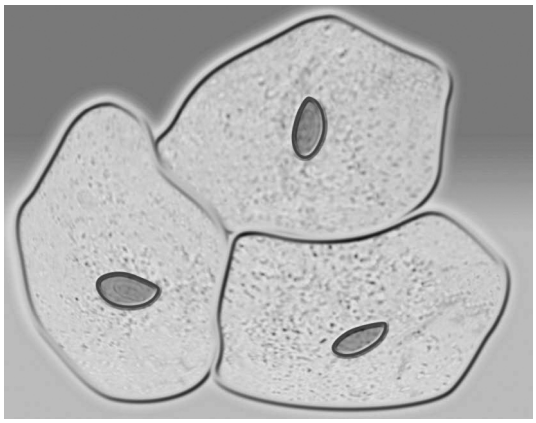
Name: _____ Group: _____ Date: _____

Checkup • Chapter 5

1 The cell

(pp. 126–131)

1. Look at the following illustration.



a) What three cell components are visible under a light (optical) microscope?

- _____
- _____
- _____

b) What is the role of each of these components?

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Name: _____ Group: _____ Date: _____

2. Cell organelles allow a cell to perform various functions.

a) What organelles produce energy in the cell through cellular respiration? _____

b) What organelles are responsible for digesting certain nutrients? _____

c) What organelle transports material produced by the cell to the cell membrane? _____

d) What organelle transports material produced by the cell from one place to another inside the cell? _____

3. Why do we say that DNA possesses a double-helix structure?

_____

_____

_____

4. What is the difference between DNA, genes and genome?

_____

_____

_____

_____

_____

_____

_____

_____

5. What is the function of genes?

_____

_____

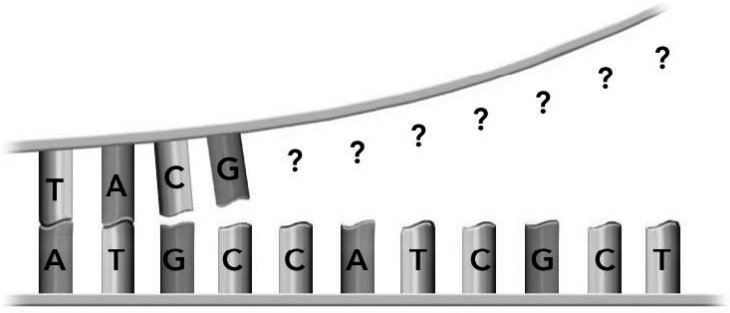
_____

_____

_____

Name: _____ Group: _____ Date: _____

6. Complete the following DNA sequence.



_____ _____ _____ _____ _____ _____ _____

7. Why are more children affected by the Andermann syndrome in the Charlevoix and Saguenay–Lac-Saint-Jean regions than elsewhere in Québec?

_____

_____

_____

_____

_____

_____

_____

2 Cell division

(pp. 131–135)

8. Give three reasons why cells divide.

- _____
  _____
- _____
  _____
- _____
  _____

Name: _____ Group: _____ Date: _____

9. What does the illustration at right show?
Explain your answer.

_____

Explanation: _____

_____

_____

_____

_____

_____

_____

_____

_____

10. What are the two types of cell division?

- _____
- _____

11. Some human cells are said to be diploid while others are said to be haploid.

a) What distinguishes a diploid cell from a haploid cell?

_____

_____

_____

_____

b) How many chromosomes does a human diploid cell contain? _____

c) How many chromosomes does a human haploid cell contain? _____

12. During which phase of mitosis are chromosomes formed? _____

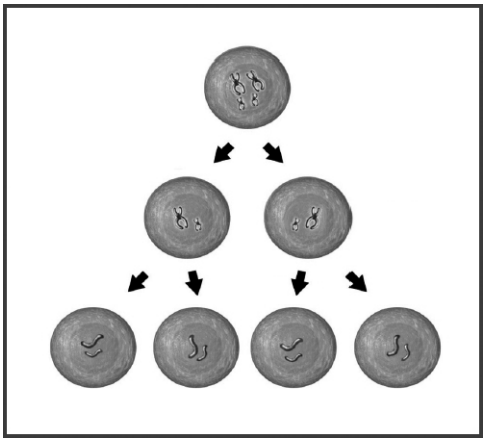
13. What kind of cells are formed during meiosis? _____

Name: _____ Group: _____ Date: _____

14. Look at the two following illustrations. They show a simplified version of the types of cell division.

Name the type of division represented in a) and in b), then explain your answer.

a)



Type of division:

_____

_____

Explanation:

_____

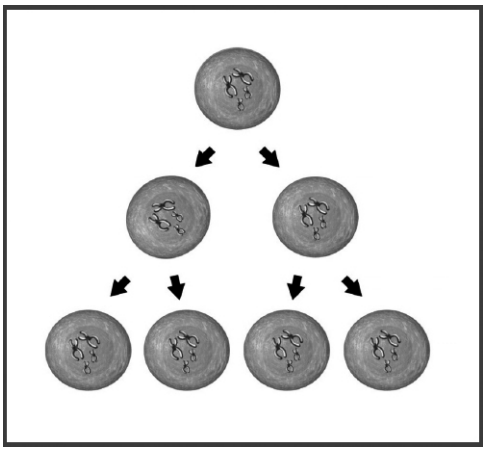
_____

_____

_____

_____

b)



Type of division:

_____

_____

Explanation:

_____

_____

_____

_____

_____

15. Answer the following questions.

a) What does a cell do when it is not dividing?

_____

_____

b) Why do cells replicate their DNA?

_____

_____

Name: _____ Group: _____ Date: _____

c) What is a gamete?

_____

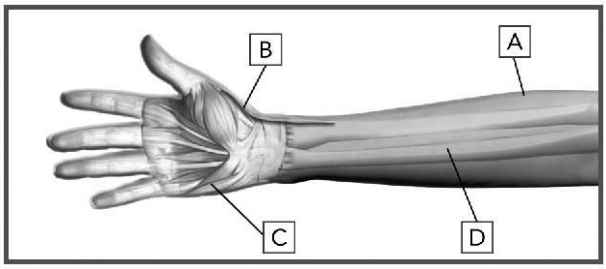
_____

ST section only

3 Cellular specialization

(pp. 136–139)

16. Look at the illustration at right. It presents various tissues found in the arm.



a) Name each type of tissue indicated in the illustration.

b) Indicate one function for each type of tissue.

	NAME OF TISSUE	FUNCTION OF TISSUE
A		
B		
C		
D		

17. What is a system?

_____

_____

_____

_____

Name: _____ Group: _____ Date: _____

18. Each of the following statements describes one of the body's vital functions. In each case, name the system that manages this function.

a) Eating well is important to keep our bodies healthy. _____

b) Nutrients carried by red blood cells provide energy for our cells. _____

c) When we urinate, we eliminate certain waste products. _____

d) Our sense of smell allows us to distinguish various odours. _____

4 The reproductive system

(pp. 140–151)

19. What is the name of the process that enables two haploid cells to produce a diploid cell? _____

20. Answer the following questions.

a) What is a zygote?

_____

_____

_____

_____

b) How is a zygote formed?

_____

_____

_____

_____

21. Name the chemical substances that are produced by the glands and secreted into the bloodstream. _____

Name: _____ Group: _____ Date: _____

22. What is the difference between adolescence and puberty?

23. Name three secondary sexual characteristics that appear in a boy and in a girl during puberty.

SECONDARY SEXUAL CHARACTERISTICS	
GIRL	BOY

24. Name the two hormones responsible for the maturation of the ovarian follicle.

- _____
- _____

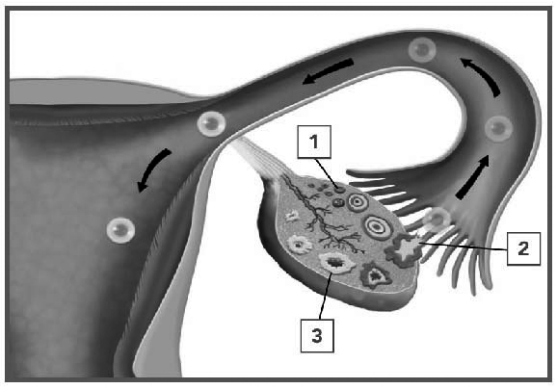
25. Name the two hormones responsible for the production of spermatozoa.

- _____
- _____

Name: _____ Group: _____ Date: _____

26. What distinguishes oogenesis, the ovarian cycle and the menstrual cycle?

27. The illustration at right presents the various stages in the ovarian cycle. For each stage, indicate the hormone(s) involved and give a brief description of is (their) action.



Stage 1

Stage 2

Name: _____ Group: _____ Date: _____

Stage 3

28. Julie, Sarah and Chloé have regular menstrual cycles: Julie has a 25-day cycle, Sarah a 30-day cycle and Chloé a 33-day cycle. If menstruation began for all three girls on the first day of the month, what will be the probable ovulation date for each one? You may use a calendar to help you.

29. Arrange the following events in chronological order:

Maturation of the ovarian follicle

Rupture of the follicle

Meiosis I of the oocyte

Meiosis II of the oocyte

Menstruation

Transformation of the ovarian follicle into the corpus luteum

1. _____

2. _____

3. _____

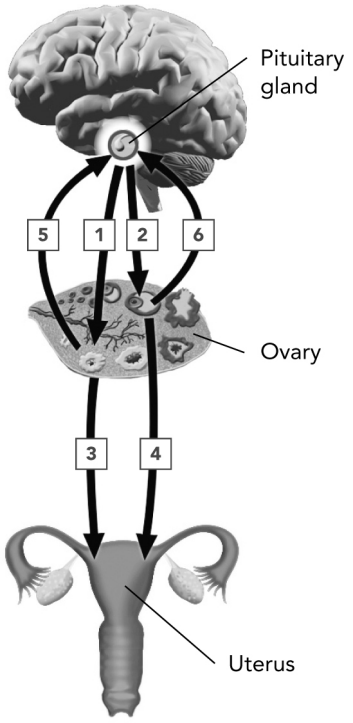
4. _____

5. _____

6. _____

Name: _____ Group: _____ Date: _____

30. Look at the illustration at right. Each arrow represents an action by a hormone.



a) In the table below, list the gland and hormone for each arrow involved as well as the organ targeted by the hormone.

b) In the last column of the table, arrange the following actions in the correct order:

- inhibits further production of FSH and LH
- causes an increase in the level of progesterone, resulting in a thickening of the endometrium (secretory phase)
- causes decreases in the level of progesterone, triggering menstruation
- causes a thickening of the endometrium (proliferation phase)
- initiates ovulation
- transforms an ovarian follicle into a corpus luteum
- stimulates the maturation of an ovarian follicle
- stimulates the production of estrogens
- stimulates the production of FSH and LH in large quantities (hormonal surge)
- stimulates the production of progesterone

ARROW	GLAND	HORMONE(S)	TARGETED ORGAN	ACTION(S)
1				

Name: _____ Group: _____ Date: _____

ARROW NO.	GLAND	HORMONE(S)	TARGETED ORGAN	ACTION(S)
2				
3				
4				
5				
6				

Name: _____ Group: _____ Date: _____

31. What changes occur in a woman's body during menopause?

32. What is spermatogenesis?

33. Name two differences between menopause and andropause.

- _____
- _____

34. Contraception makes it possible to stop the process that leads to the conception of a child. Name three contraceptive methods that prevent ovulation.

- _____
- _____
- _____