Sexual Reproduction Review Package

1. Text Questions:

Page 57 #1-4, 6

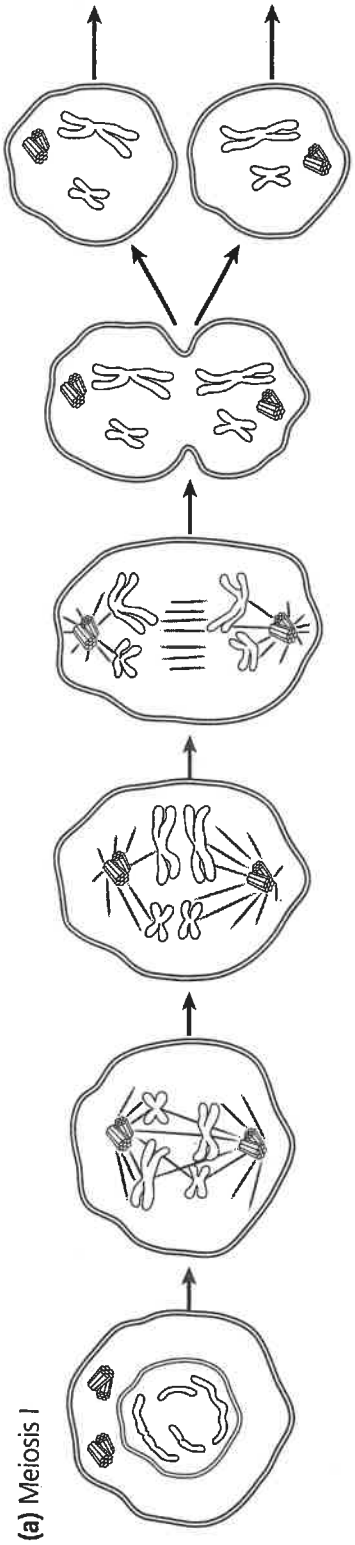
Page 69 #1-4, 6

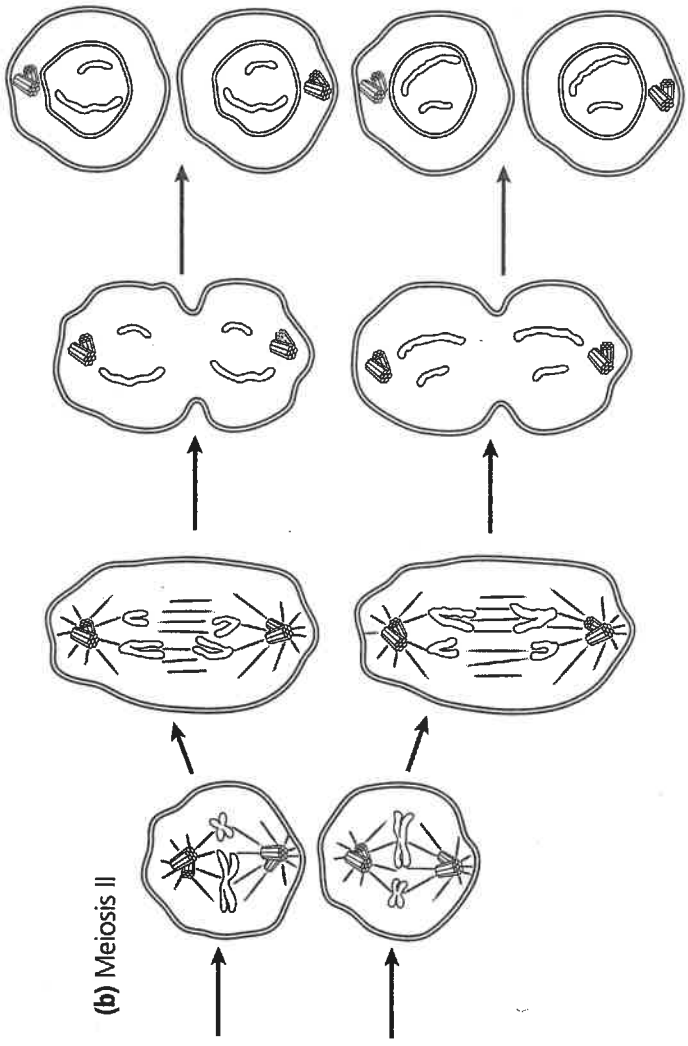
Page 76 #9, 11-14

2. Know how to label and describe the stages in Meiosis
3. Work through the worksheets that include assessments 1.3 and 1.4
4. Practice page on embryonic development

Stages of Meiosis

Label the stages of meiosis I and meiosis II and briefly explain what is happening at each stage.





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1.3 Assessment

Match each term on the left with the best description on the right. Each description may be used only once.

Term	Description
1. ____ diploid	A. a sex cell
2. ____ gamete	B. union of the egg and sperm
3. ____ haploid	C. has a full set of chromosomes
4. ____ meiosis	D. process that produces haploid cells
5. ____ fertilization	E. has half the number of chromosomes

Circle the letter of the best answer for questions 6 to 20.

6. What does the female parent contribute in sexual reproduction?

A. an egg
C. a zygote
B. a sperm
D. an ovary

7. Where are sperm produced?

A. in the brain
C. in the testes
B. in the uterus
D. in the ovaries

8. How are eggs and sperm similar?

A. They are diploid cells.
C. They are produced by mitosis.
B. They are haploid cells.
D. They are produced by fertilization.

9. What is formed when a sperm fertilizes an egg?

A. a zygote
C. a haploid cell
B. a gamete
D. a homologous chromosome

10. The Vancouver Island marmot has 40 chromosomes in its body cells. How many chromosomes would you expect a male marmot to have in its sperm cells?

A. 10 chromosomes
C. 40 chromosomes
B. 20 chromosomes
D. 80 chromosomes

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11. The gametes of a white-tailed deer have 35 chromosomes. When the sperm of a white-tailed buck combines with the egg of a white-tailed doe, how many chromosomes would the zygote have?

A. 17.5 chromosomes

B. 35 chromosomes

C. 70 chromosomes

D. 140 chromosomes

12. What usually combines during fertilization?

A. zygotes

B. embryos

C. gametes

D. diploid cells

13. Which of the following shows the series of events in human development?

A. embryo → zygote → sperm + egg → fetus

B. sperm + egg → fetus → zygote → embryo

C. zygote → fetus → embryo → sperm + egg

D. sperm + egg → zygote → embryo → fetus

14. What allows a zygote to develop into an embryo?

A. the zygote dividing by mitosis over several weeks

B. the zygote dividing by meiosis over several weeks

C. the zygote developing into gametes through mitosis over several weeks

D. the zygote fusing with another zygote and then dividing by meiosis over several weeks

15. Which of the following is associated with sexual reproduction?

I	meiosis
II	pollination
III	fertilization

A. I and II only

B. I and III only

C. II and III only

D. I, II, and III

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16. Which of the following applies to meiosis?

	Number of Cell Divisions	Number of Daughter Cells
A.	2	4
B.	2	2
C.	1	4
D.	1	2

17. Paired chromosomes are called

A. diploid.

B. haploid.

C. asexual.

D. homologous.

18. During which phase of meiosis are the homologous chromosome pairs lined up in the middle of the cell?

A. prophase I

B. anaphase I

C. telophase I

D. metaphase I

19. Four nuclei form around the sets of chromosomes during

A. prophase II.

B. anaphase II.

C. telophase II.

D. metaphase II.

20. When is the nuclear membrane disappearing during meiosis?

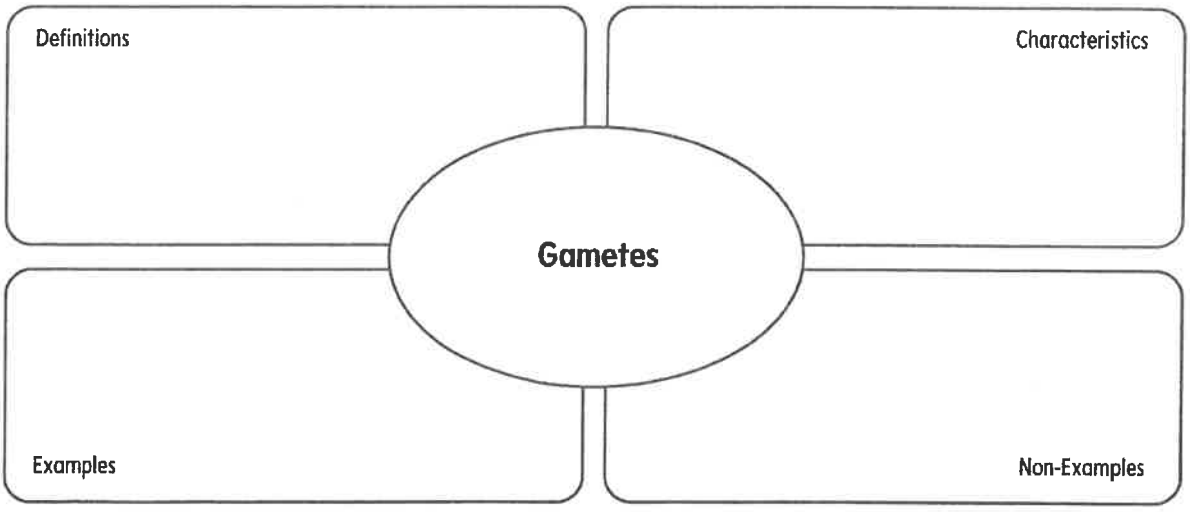
A. interphase and prophase I

B. prophase I and prophase II

C. telophase I and telophase II

D. metaphase I and anaphase II

21. Complete the following Frayer model for gametes.



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1.4 Assessment

Match each term on the left with the best description on the right. Each description may be used only once.

Term	Description
1. ____ genetic variation	A. type of reproduction that requires one parent
2. ____ sexual reproduction	B. type of reproduction that requires two parents
3. ____ asexual reproduction	C. DNA sequences are different for each individual in a species

Circle the letter of the best answer for questions 4 to 10.

4. Asexual reproduction requires

A. two parents.

B. two gametes.

C. only one parent.

D. only one gamete.

5. Which of the following is an advantage of asexual reproduction?

A. it occurs really slowly

B. it allows the population to grow rapidly

C. it takes time for the offspring to mature before they can reproduce

D. it allows the parents to pass on 50% of their genetic material to their offspring

6. A lack of genetic diversity from asexual reproduction means that

A. all the gametes are clones of each other.

B. all the offspring are genetically identical to each other.

C. the offspring did not inherit any genetic materials from the parents.

D. the population have individuals with different combinations of DNA sequences.

7. A deadly fungal disease hit an apple orchard that was grown by asexual reproduction using grafting. What would you expect to happen to the rest of the crop if one apple tree was vulnerable to that disease?

A. All the apple trees would grow rapidly, producing more apples.

B. All the other apple trees would be resistant to the fungal disease.

C. All the other apple trees would adapt so that they could survive the disease.

D. All the other apple trees would be equally vulnerable to the disease and could be wiped out.

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8. Sexual reproduction promotes

A. genetic diversity.

B. susceptibility to disease.

C. the production of clones.

D. the same features in all the individuals.

9. Which of the following explains why finding a mate for sexual reproduction is a disadvantage?

I	It is time consuming to look for that mate.
II	It exposes the organism to potential predators.
III	It may involve competition with other organisms for that mate and result in injury or death.

A. I and II only

B. I and III only

C. II and III only

D. I, II, and III

10. Which of the following is a disadvantage of sexual reproduction?

A. No gametes are required.

B. Fewer offspring are produced.

C. It is an energy efficient way to produce offspring.

D. A shorter time is needed to produce the offspring.

11. Complete the T-chart for sexual reproduction showing its advantages and disadvantages.

Sexual Reproduction

Advantages	Disadvantages

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Embryonic Development Practice

1. What is the name of the cells which form during cleavage?
a. Blastula
b. Gastrula
c. Blastocoel
d. Blastomere

2. What is the name of the phase, when the embryo has 16 blastomeres (i.e., cells)?
a. Bastomere
b. Blastula
c. Morula
d. Gastrula

3. What is the name of the phase, when the embryo resembles a hollow multicellular ball?
a. Blastula
b. Blastopore
c. Bastomere
d. Blastocoel

4. In morula the embryo resembles a _____
a. Banana
b. Apple
c. Raspberry
d. Cucumber

5. What is the name of the simple backbone that can be seen during the development of a baby?
a. Neural plate
b. Notochord
c. Neural crest
d. Neural tube

6. Differentiation starts in _____
a. Morula
b. Blastula
c. Gastrula
d. Blastocoel

7. The name of the fluid filled cavity in the blastula is the _____
a. Blastopore
b. Blastomere
c. Blastocoel
d. Morula

8. The number of cells normally associated with the term morula
a. 2
b. 4
c. 8
d. 16

9. The number of germ layers that occur in the gastrula is
a. 1
b. 2
c. 3
d. 4

10. A developing child is considered a fetus when
a. 16 cells form
b. After 1 month
c. When organs start to develop
d. When gastrulation starts to occur

11. The cells of the embryo are _____
a. Differentiated
b. Stem cells
c. Undergoing meiosis
d. Genetically unique

12. External fertilization is common in _____
a. Terrestrial animals
b. Birds
c. Humans
d. Aquatic species