

**Chapter 2 Genetics and Prenatal Development**

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# TOTAL ASSESSMENT GUIDE

## Chapter 2-Section 1

### Genetics and Prenatal Development

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## Section 1 Genetic Influence on Development

### Test Item File

#### Multiple Choice Questions

1. The human body contains how many chromosomes?
- a. 23
  - b. 46
  - c. 69
  - d. 92

Answer: B

Difficulty: 1

Page: 46

Skill: F

Learning Objective: 2.1

Bloom's Taxonomy Level: Remember

2. The average human cell has \_\_\_\_ chromosomes.
- a. 42
  - b. 46
  - c. 23
  - d. 26

Answer: B

Difficulty: 1

Page: 46

Skill: F

Learning Objective: 2.1

Bloom's Taxonomy Level: Remember

% correct 84 a= 1 b= 84 c= 14 d= 1 r = .19

3. How many pairs of chromosomes do humans have?
- a. 23
  - b. 46
  - c. 69
  - d. 92

Answer: A

Difficulty: 1

Page: 46

Skill: F

Learning Objective: 2.1

Bloom's Taxonomy Level: Remember

% correct 76 a= 76 b= 24 c= 0 d= 0 r = .33

4. How many chromosomes from each pair of chromosomes are generally inherited from the father?
- a. 1
  - b. 2
  - c. 3

d. 4

Answer: A

Difficulty: 1

Page: 46

Skill: F

Learning Objective: 2.1

Bloom's Taxonomy Level: Remember

5. According to the text, chromosomes are composed of complex molecules known as \_\_\_\_.

a. nucleotides

*Incorrect. The complex molecules are known as DNA.*

b. genes

c. DNA

*Correct. DNA is a long strand of cell material that stores and transfers genetic information.*

d. RNA

Answer: C

Difficulty: 2

Page: 46

Skill: C

Learning Objective: 2.1

Bloom's Taxonomy Level: Understand

6. Chromosomes are composed of complex molecules known as \_\_\_\_.

a. DNA

b. nucleotide pairs

c. genetic

d. dominant recessives

Answer: A

Difficulty: 1

Page: 46

Skill: F

Learning Objective: 2.1

Bloom's Taxonomy Level: Remember

7. Chromosomes are organized into segments called \_\_\_\_.

a. DNA

*Incorrect. The segments are called genes.*

b. RNA

c. genes

*Correct. Genes are segments of DNA that contain coded instructions for the growth and function of an organism.*

d. nucleotides

Answer: C

Difficulty: 1

Page: 46

Skill: C

Learning Objective: 2.1

Bloom's Taxonomy Level: Understand

8. Genes contain paired sequences of chemicals called \_\_\_\_.
- a. genes
  - b. RNA
  - c. DNA
  - d. nucleotides

Answer: D

Difficulty: 2

Page: 46

Skill: F

Learning Objective: 2.1

Bloom's Taxonomy Level: Remember

9. Genes contain \_\_\_\_.
- a. protein segments
  - b. nucleotides
  - c. fatty cells
  - d. chromosomes

Answer: B

Difficulty: 2

Page: 46

Skill: F

Learning Objective: 2.1

Bloom's Taxonomy Level: Remember

10. Approximately how many genes comprise the human genome?
- a. 10,000
  - b. 23,000
  - c. 50,000
  - d. 100,000

Answer: B

Difficulty: 2

Page: 46

Skill: F

Learning Objective: 2.1

Bloom's Taxonomy Level: Remember

11. How many nucleotide pairs comprise the human genome?
- a. 100,000
  - b. 150 million
  - c. 3 billion
  - d. 5 trillion

Answer: C

Difficulty: 1

Page: 46

Skill: F

Learning Objective: 2.1

Bloom's Taxonomy Level: Remember

12. The totality of an individual's genes is referred to as his or her \_\_\_\_.
- a. phenotype
  - b. genotype

- c. inheritance
- d. environment

Answer: B

Difficulty: 1

Page: 46

Skill: F

Learning Objective: 2.1

Bloom's Taxonomy Level: Remember

13. An individual's complete genetic makeup is his or her \_\_\_\_.
- a. genotype
  - b. phenotype
  - c. allele
  - d. reaction range

Answer: A

Difficulty: 1

Page: 46

Skill: F

Learning Objective: 2.1

Bloom's Taxonomy Level: Remember

14. A person's \_\_\_\_ is/are their genetic makeup, whereas a person's \_\_\_\_ is/are their characteristics.
- a. phenotype; genotype
  - b. genotype; phenotype
  - c. nucleotides; DNA
  - d. DNA; nucleotides

Answer: B

Difficulty: 3

Page: 46

Skill: F

Learning Objective: 2.1

Bloom's Taxonomy Level: Remember

% correct 88 a= 12 b= 88 c= 0 d= 0 r = .43

15. The characteristics of an individual's genetic material are referred to as his or her \_\_\_\_.
- a. phenotype
  - b. genotype
  - c. inheritance
  - d. environment

Answer: A

Difficulty: 2

Page: 46

Skill: F

Learning Objective: 2.1

Bloom's Taxonomy Level: Remember

16. A person's characteristics are known as his or her \_\_\_\_.
- a. phenotype
  - b. genotype
  - c. chromosomes

- d. DNA

Answer: A

Difficulty: 1

Page: 46

Skill: F

Learning Objective: 2.1

Bloom's Taxonomy Level: Remember

17. The difference between an individual's genotype and its expression in his or her phenotype is a consequence of the person's \_\_\_\_.

- a. genes
- b. DNA
- c. environment
- d. parents

Answer: C

Difficulty: 2

Page: 46

Skill: F

Learning Objective: 2.1

Bloom's Taxonomy Level: Remember

18. Fred was born into a family with high musical talent. Both of his parents were professional musicians who encouraged and fostered his musical development. Throughout childhood, he practiced the guitar whenever he could and eventually became a professional musician himself. Which of the following best describes Fred's genotype?

- a. Fred's musical genes  
*Correct. One's genotype is his or her complete genetic makeup.*
- b. Fred's musical talent  
*Incorrect. Musical talent is the characteristic, or the phenotype.*
- c. Fred's nurturing parents
- d. Fred's musical genes and musical talent

Answer: A

Difficulty: 2

Page: 46

Skill: A

Learning Objective: 2.1

Bloom's Taxonomy Level: Apply

19. Jill's mother was an All-American in the 1500m and qualified for the Olympic team in the marathon. Jill is a freshman in high school and does not think that she will need to train to become a member of the school's cross country team. Jill keeps telling you that her mother was a great runner, so she will also be a great runner. What do you think?

- a. She is correct; she will be a great runner no matter what she does.  
*Incorrect. Jill will need to train to become a great runner; that is, she will need to interact with the environment to express those genes.*
- b. It is unlikely that Jill even has the genotype for running.
- c. Jill might have the genotype for running ability, but she will need to train become a great runner.  
*Correct. The athletic ability that may be present in Jill's genotype will not express itself if she does nothing to encourage it, such as training.*
- d. Jill has also inherited the genes for superior intelligence.

Answer: C

Difficulty: 2

Page: 46

Skill: A

Learning Objective: 2.1

Bloom's Taxonomy Level: Apply

20. Alejandro was born into a family with high musical talent. Both of his parents were professional musicians who encouraged and fostered his musical development. Throughout childhood, he practiced the guitar whenever he could and eventually became a professional musician himself. Which of the following best describes Alejandro's phenotype?
- a. Alejandro's musical genes  
*Incorrect. Alejandro's musical genes are his genotype.*
  - b. Alejandro's musical talent
  - c. Alejandro's nurturing parents  
*Correct. Alejandro's genotype includes exceptional musical ability, but it's his parents' support of this ability that encouraged those genes to be expressed.*
  - d. Alejandro's practice of the guitar

Answer: C

Difficulty: 2

Page: 46

Skill: A

Learning Objective: 2.1

Bloom's Taxonomy Level: Apply

21. Thomas's biological mother and father are both gifted athletes. He was adopted by a couple who had no interest in him being involved in sports. Although Thomas likely inherited athletic ability, it was never expressed in his \_\_\_\_.
- a. genotype
  - b. phenotype  
*Correct. Thomas likely inherited his biological parents' genotype, but his adoptive parents' disinterest in sports likely inhibited the development of athletic ability in Thomas's phenotype.*
  - c. genes  
*Incorrect. His genetic potential was not expressed in his phenotype.*
  - d. alleles

Answer: B

Difficulty: 2

Page: 46

Skill: A

Learning Objective: 2.1

Bloom's Taxonomy Level: Apply

% correct 89 a= 7 b= 89 c= 3 d= 2 r = .18

22. On every pair of chromosomes there are how many forms of each gene?
- a. 1
  - b. 2
  - c. 3
  - d. 4

Answer: B



Difficulty: 1

Page: 47

Skill: F

Learning Objective: 2.1

Bloom's Taxonomy Level: Remember

23. Each form of a gene that is contained within a chromosome is referred to as a \_\_\_\_.
- a. dominant gene
  - b. recessive gene
  - c. allele
  - d. single gene

Answer: C

Difficulty: 1

Page: 47

Skill: F

Learning Objective: 2.1

Bloom's Taxonomy Level: Remember

24. What type of gene, if it is present, will be expressed in the phenotype?
- a. recessive gene
  - b. dominant gene
- Correct. Recessive genes will only be expressed when there is no dominant gene present.*
- c. expressed gene
  - d. controller gene
- Incorrect. If a dominant gene is present, it will be expressed in the phenotype.*

Answer: B

Difficulty: 1

Page: 47

Skill: C

Learning Objective: 2.1

Bloom's Taxonomy Level: Understand

25. If having more than five fingers occurs because of a dominant gene, what needs to happen for a person to have more than five fingers?
- a. A person must have that dominant gene.
- Correct. If a dominant gene is present, it will be expressed in the phenotype.*
- b. A person must have two recessive genes.
  - c. The gene must mutate.
  - d. Both dominant genes must be present.
- Incorrect. For a dominant cell trait to be expressed, all that is needed is the presence of the dominant cell.*

Answer: A

Difficulty: 2

Page: 47

Skill: A

Learning Objective: 2.1

Bloom's Taxonomy Level: Apply

26. If the gene for curly hair is dominant and the gene for straight hair is recessive, from a dominant-recessive pairing, which of the following would be an individual's phenotype?
- a. straight hair

*Incorrect. Straight hair is recessive.*

- b. curly hair

*Correct. Since curly hair is a dominant trait and a heterozygotic pairing is present, the individual's phenotype would be the curly hair, because curly hair is dominant and straight hair is recessive.*

- c. dominant-recessive
- d. their complete genetic makeup

Answer: B

Difficulty: 2

Page: 47

Skill: A

Learning Objective: 2.1

Bloom's Taxonomy Level: Apply

27. Jill's mother and father both have brown eyes, yet she has blue eyes. She has come to believe that she is not her parents' actual biological daughter. What would you tell her?

- a. Her mother and father probably carry the recessive trait for blue eyes.

*Correct. The blue-eyed child of two brown-eyed parents probably inherited a recessive blue-eyed gene from each parent.*

- b. She is correct; there is no way that she would have blue eyes if she were really her parents' biological daughter.

*Incorrect. Her parents most likely carry the recessive trait from blue eyes.*

- c. Blue eyes are dominant, so her parents should have blue eyes too.
- d. Only the environment determines eye color once the fetus has been born.

Answer: A

Difficulty: 2

Page: 47

Skill: A

Learning Objective: 2.1

Bloom's Taxonomy Level: Apply

% correct 97 a= 97 b= 2 c= 1 d= 0 r = .20

28. For a recessive gene to be expressed in the phenotype, it must be paired with a \_\_\_\_.

- a. dominant gene
- b. recessive gene

*Correct. Two recessive genes must be present for that trait to be expressed.*

- c. expressed gene

*Incorrect. It must be paired with another recessive gene to be expressed.*

- d. controller gene

Answer: B

Difficulty: 1

Page: 47

Skill: C

Learning Objective: 2.1

Bloom's Taxonomy Level: Understand

29. How would you create an individual who will definitely have blue eyes?

- a. Make sure they have a pair of homogenous chromosomes for blue eyes.
- b. Make sure they have a pair of heterogenous chromosomes for blue eyes.
- c. Make sure they have a pair of alleles for eye color.
- d. Make sure they have 1 recessive gene for blue eyes.

Answer: B

Difficulty: 1

Page: 47

Skill: A

Learning Objective: 2.1

Bloom's Taxonomy Level: Apply

30. What is occurring when the phenotype is influenced primarily but not exclusively by the dominant gene?

- a. expression of the dominant gene
- b. expression of the recessive gene
- c. incomplete dominance

*Correct. The sickle-cell trait that is common among black Africans and African Americans is an example.*

- d. failure of expression

*Incorrect. Incomplete dominance occurs when the phenotype is influenced primarily but not exclusively by the dominant gene.*

Answer: C

Difficulty: 2

Page: 47–48

Skill: C

Learning Objective: 2.1

Bloom's Taxonomy Level: Understand

31. In a dominant-recessive pairing, which of the following genes would be expressed in a person's phenotype?

- a. the dominant

*Correct. In a dominant-recessive pairing, the dominant gene will express itself in a person's phenotype. For example, if you inherited a gene for curly hair from one parent and straight hair from the other, you would have curly hair, because curly hair is dominant and straight hair is recessive.*

- b. the recessive

*Incorrect. The recessive trait would not be expressed in the presence of a dominant gene.*

- c. the dominant-recessive pairing

- d. it is too complicated to know which genes will be expressed

Answer: A

Difficulty: 2

Page: 47

Skill: C

Learning Objective: 2.1

Bloom's Taxonomy Level: Understand

32. Which of the following is an example of an incomplete dominant inheritance?

- a. Down syndrome

*Incorrect. Down syndrome is a genetic-linked disorder.*

- b. Fragile X

- c. sickle-cell anemia

*Correct. Incomplete dominance occurs when the phenotype is influenced primarily, but not exclusively, by the dominant gene. One example of incomplete dominance involves the sickle-cell trait that is common among black Africans and their descendants, such as African Americans.*

- d. HIV

Answer: C

Difficulty: 2

Page: 47–48

Skill: C

Learning Objective: 2.1

Bloom's Taxonomy Level: Understand

33. Who is most likely to have sickle-cell anemia?

- a. European and European Americans
- b. Hispanics and Hispanic Americans
- c. Asians and Asian Americans

*Incorrect. Africans and African Americans are most likely to have sickle-cell anemia.*

- d. Africans and African Americans

*Correct. It also occurs more rarely in people whose ancestors came from India or the Mediterranean.*

Answer: D

Difficulty: 1

Page: 47–48

Skill: C

Learning Objective: 2.1

Bloom's Taxonomy Level: Understand

34. What recessive disorder results in non-normal shaped blood cells that clog up blood vessels and cause pain, increased susceptibility to disease, and early death?

- a. Tay-Sachs
- b. trisomy-21
- c. sickle-cell anemia
- d. malaria

Answer: C

Difficulty: 1

Page: 48

Skill: F

Learning Objective: 2.1

Bloom's Taxonomy Level: Remember

35. Sickle-cell anemia is an evolutionary defense against what disease?

- a. sickle-cell trait
- b. malaria
- c. smallpox
- d. Nile fever

Answer: B

Difficulty: 1

Page: 48–49

Skill: F

Learning Objective: 2.1

Bloom's Taxonomy Level: Remember

% correct 88 a= 6 b= 88 c= 0 d= 6 r = .57

36. Single gene pairs play a crucial role in development. However, it is more common that developmental outcomes occur because of the interaction of multiple genes. This is known as \_\_\_\_.
- a. inheritability
  - b. polygenic inheritance
- Correct. Polygenetic inheritance accounts for characteristics such as height and weight as well as intelligence and personality.*
- c. bimodal inheritance
  - d. single dominance

Answer: B

Difficulty: 2

Page: 49

Skill: C

Learning Objective: 2.1

Bloom's Taxonomy Level: Understand

37. Characteristics such as height, weight, and skin color are made up of a \_\_\_\_.
- a. homogenetic inheritance
  - b. heterogenetic inheritance
  - c. dominant-recessive inheritance
  - d. polygenetic inheritance

Answer: D

Difficulty: 1

Page: 49

Skill: F

Learning Objective: 2.1

Bloom's Taxonomy Level: Remember

% correct 47 a= 6 b= 18 c= 29 d= 47 r = .16

38. The chromosomes that determine if a fetus will be male or female are known as the \_\_\_\_.
- a. sex chromosomes
- Correct. These are called XX in females and XY in males.*
- b. gender chromosomes
- Incorrect. The sex chromosomes determine the sex of the offspring.*
- c. male chromosomes
  - d. female chromosomes

Answer: A

Difficulty: 1

Page: 49

Skill: C

Learning Objective: 2.2

Bloom's Taxonomy Level: Understand

39. If a fetus has the sex chromosomes XX, its genotype is \_\_\_\_.
- a. female
- Correct. Males have XY sex chromosomes.*
- b. male
- Incorrect. XX genotype for the sex chromosome would be female.*
- c. undetermined

- d. dimorphic

Answer: A

Difficulty: 1

Page: 49

Skill: C

Learning Objective: 2.2

Bloom's Taxonomy Level: Understand

40. If the fetus has the sex chromosomes XY, its genotype is \_\_\_\_.

a. female

*Incorrect. XY genotype for the sex chromosome would be male.*

b. male

*Correct. Females have XX sex chromosomes.*

c. undetermined

d. dimorphic

Answer: B

Difficulty: 1

Page: 49

Skill: C

Learning Objective: 2.2

Bloom's Taxonomy Level: Understand

41. A person with an XY pairing of chromosomes is a \_\_\_\_, whereas a person with an XX pairing of chromosomes is a \_\_\_\_.

a. male; female

b. female; male

c. homogenetic inheritance; polygenetic inheritance

d. polygenetic inheritance; homogenetic inheritance

Answer: A

Difficulty: 2

Page: 49

Skill: F

Learning Objective: 2.2

Bloom's Taxonomy Level: Remember

42. Which of the two sex chromosomes is significantly smaller and contains approximately 30% less genetic material?

a. X

*Incorrect. The Y chromosome is notably smaller and contains less genetic material.*

b. Y

*Correct. The Y chromosome is notably smaller and contains only 1/2 the genetic material.*

c. O

d. They are both the same.

Answer: B

Difficulty: 1

Page: 49

Skill: C

Learning Objective: 2.2

Bloom's Taxonomy Level: Understand

43. Of the following, which best describes the Y chromosome?

- a. The Y chromosome is bigger than the X chromosome.
- b. The Y chromosome contains about 30% less genetic material than the X chromosome.
- c. The Y chromosome is responsible for determining the sex of the child.
- d. There are no differences between the Y chromosome and the X chromosome.

Answer: B

Difficulty: 2

Page: 49

Skill: F

Learning Objective: 2.2

Bloom's Taxonomy Level: Remember

44. All eggs contain which sex chromosome?
- a. X  
*Correct. Females carry no Y chromosomes.*
  - b. Y  
*Incorrect. All ova contain only the X chromosome.*
  - c. O
  - d. None

Answer: A

Difficulty: 1

Page: 49

Skill: C

Learning Objective: 2.2

Bloom's Taxonomy Level: Understand

45. All ova, a female reproductive egg, are \_\_\_\_.
- a. X chromosome
  - b. Y chromosome
  - c. XY chromosome
  - d. XX chromosome

Answer: A

Difficulty: 1

Page: 49

Skill: F

Learning Objective: 2.2

Bloom's Taxonomy Level: Remember

46. What determines the sex of the offspring?
- a. the ovum
  - b. the first sperm cell to arrive at the ovum
  - c. egg rearrangement at fertilization
  - d. the time of the monthly cycle when fertilization occurs

Answer: B

Difficulty: 1

Page: 49

Skill: F

Learning Objective: 2.2

Bloom's Taxonomy Level: Remember

47. What happens that determines the sex of the offspring?

- a. The eggs or ovum contain the X chromosome and the sperm cells carry either the X or the Y. The sperm cell that is involved in fertilization determines the sex of the offspring.

*Correct. The woman's ova are not responsible for determining a child's sex, as they carry only X chromosomes.*

- b. The sperm cells all carry the X chromosome. The ovum contains both the X and Y, so it is the ovum that determines the sex of the offspring.

*Incorrect. The sperm cell determines the sex of the offspring because it either carries the Y or the X chromosome.*

- c. The ovum and sperm cells both carry X chromosomes. The placenta carries both the X and Y and it determines the sex of the offspring.

- d. The ovum and the sperm cells both contain the X chromosome. During the course of fertilization either an X or a Y will be created, which determines the sex of the offspring.

Answer: A

Difficulty: 1

Page: 49

Skill: C

Learning Objective: 2.2

Bloom's Taxonomy Level: Understand

48. Your older brother has a friend who was angry with his wife because they have two sons and he wanted to have a daughter. He thought that she was responsible for having two boys rather than a boy and a girl. What would you tell your brother?

- a. His friend was correct, she was purposefully having sons instead of a daughter.

- b. It was not anyone's "fault," but the sperm determined the sex of the offspring.

*Correct. The sex of the offspring is determined by which chromosome is contributed by the sperm.*

- c. It was not anyone's "fault" even though her ova determined the sex of the offspring.

*Incorrect. The sperm cell determines the sex of the offspring.*

- d. Sex of the offspring is determined by day of the week. They both should have known what day they were trying to conceive.

Answer: B

Difficulty: 1

Page: 49

Skill: A

Learning Objective: 2.2

Bloom's Taxonomy Level: Apply

% correct 76 a= 6 b= 76 c= 12 d= 6 r = .17

49. While having a conversation with a friend who is pregnant, she says to you that because she is "carrying high" she will have a girl. Based upon the textbook, which of the following statements are you thinking?

- a. There is no scientific evidence to support her belief.

*Correct. This is a common misconception that has no scientific basis.*

- b. There are countless research studies that support her belief.

- c. Statistically speaking, she is correct.

*Incorrect. "Carrying high" is folklore.*

- d. She is wrong, a pregnant woman who is "carrying high" is more likely to be carrying a boy.



Answer: A

Difficulty: 1

Page: 49

Skill: A

Learning Objective: 2.2

Bloom's Taxonomy Level: Apply

50. According to ancient Mayan folklore, how can one predict if they are having a girl?

- a. if the mother's age and the month of conception are both even or odd

*Correct. This is how Ancient Mayans predicted gender.*

- b. if a woman is carrying her pregnancy low in her abdomen

- c. if her right breast is larger than her left

*Incorrect. This belief is attributed to male pregnancies by other cultures.*

- d. if craves salty and sour food

Answer: A

Difficulty: 2

Page: 49

Skill: A

Learning Objective: 2.2

Bloom's Taxonomy Level: Remember

51. According to ancient Chinese folklore, how can one predict if they are having a boy?

- a. If the mother's age and the month of conception are both even or odd.

*Incorrect. This is how Ancient Mayans predicted gender.*

- b. If a woman is carrying her pregnancy low in her abdomen.

*Correct. This belief is attributed to male pregnancies by Chinese folklore.*

- c. If her right breast is larger than her left.

- d. If craves salty and sour food.

Answer: B

Difficulty: 2

Page: 49

Skill: A

Learning Objective: 2.2

Bloom's Taxonomy Level: Remember

52. Who is more affected by X-linked inherited disorders?

- a. females

*Incorrect. Males are more likely to be affected by X-linked inherited disorders.*

- b. males

*Correct. Males are more affected because they do not have a second X chromosome that may be carrying a dominant gene to block the expression of an X-linked inherited disorder.*

- c. children under one year of age

- d. adults with mutations

Answer: B

Difficulty: 1

Page: 49

Skill: C

Learning Objective: 2.2

Bloom's Taxonomy Level: Understand

53. Who are generally carriers of X-linked disorders?
- a. females
  - b. males
  - c. individuals who have been exposed to teratogens
  - d. individuals with a trisomy

Answer: A

Difficulty: 1

Page: 49

Skill: F

Learning Objective: 2.2

Bloom's Taxonomy Level: Remember

54. Why are males more likely to have X-linked inherited disorders?
- a. If the X chromosome contains the recessive gene for the disorder, their Y chromosome has no dominant gene to prevent it.  
*Correct. Males also would not have a second X chromosome that may contain a dominant gene to block the X-linked inherited disorder.*
  - b. They are generally more immature at birth.
  - c. Androgen is a hormone that causes disorders to occur.
  - d. If the Y chromosome does not develop properly, the genes on this chromosome cannot prevent the disorder from occurring.

*Incorrect. If the X chromosome contains the recessive gene for the disorder, the Y chromosome does not have the genes to counteract the gene on the X chromosome.*

Answer: A

Difficulty: 1

Page: 49

Skill: C

Learning Objective: 2.2

Bloom's Taxonomy Level: Understand

55. Why are males more susceptible to X linked disorders?
- a. Because males have an XX pairing of chromosomes; therefore, this increases their odds of a disorder.
  - b. Because males have an XY pairing of chromosomes and the Y chromosome is more likely to host a genetic disorder.
  - c. Because most genetic disorders are connected to the dominant gene and since men have an XY pairing a disorder is more likely to be expressed.
  - d. Because males have one X chromosome, and if a recessive gene for a disorder is present, he does not have another X chromosome that may contain a dominant gene to block its expression.

Answer: D

Difficulty: 3

Page: 49

Skill: F

Learning Objective: 2.2

Bloom's Taxonomy Level: Remember

56. Which of the following is an example of an X-linked disorder?
- a. schizophrenia
  - b. hemophilia
  - c. bipolar disease

- d. enuresis

Answer: B

Difficulty: 1

Page: 49–50

Skill: F

Learning Objective: 2.2

Bloom's Taxonomy Level: Remember

57. Your friend has hemophilia and was worried that he could pass it to his offspring when he had children. What would you tell him?
- a. He is probably correct, he will pass hemophilia on.
  - b. Hemophilia is an X-linked disorder and it would be impossible for him to pass it to any male offspring. It would be possible for his female offspring to be carriers, though.  
*Correct. Since his male offspring would inherit his Y chromosome, he cannot pass along an X-linked disorder to them.*
  - c. X-linked disorders are not inherited; he has no worries  
*Incorrect. X-linked disorders are inherited.*
  - d. Since he has hemophilia, he is probably sterile and unable to father children.

Answer: B

Difficulty: 1

Page: 49–50

Skill: A

Learning Objective: 2.2

Bloom's Taxonomy Level: Apply

58. Which of the following is an example of an X-linked inheritance disorder?
- a. autism
  - b. Down syndrome
  - c. hemophilia
  - d. Turner's syndrome

Answer: C

Difficulty: 1

Page: 49–50

Skill: F

Learning Objective: 2.2

Bloom's Taxonomy Level: Remember

59. Nature is to \_\_\_\_ as nurture is to \_\_\_\_.
- a. conditioning; learning
  - b. learning; conditioning
  - c. environment; genetics
  - d. genetics; environment

Answer: D

Difficulty: 1

Page: 51

Skill: F

Learning Objective: 2.3

Bloom's Taxonomy Level: Remember

% correct 82 a= 0 b= 6 c= 12 d= 82 r = .32

60. According to your text, what have researchers concluded about the nature–nurture debate in terms of development?
- a. Genetics is more important.
  - b. Environment is more important.
  - c. Both are important.
  - d. Genetics is more important in infancy and environment in childhood.

Answer: C

Difficulty: 1

Page: 51

Skill: F

Learning Objective: 2.3

Bloom's Taxonomy Level: Remember

61. Which the following statements best describes the nature–nurture debate?
- a. Most characteristics develop solely from nature or nurture, but not both.
  - b. Most characteristics develop from a combination of nature and nurture.
  - c. Most characteristics develop from only nature.
  - d. Most characteristics develop from only nurture.

Answer: B

Difficulty: 1

Page: 51

Skill: F

Learning Objective: 2.3

Bloom's Taxonomy Level: Remember

62. What field is concerned with the question of how much genes influence development?
- a. embryology
  - b. behavior genetics
  - c. developmental psychology
  - d. genetics

Answer: B

Difficulty: 1

Page: 51

Skill: F

Learning Objective: 2.3

Bloom's Taxonomy Level: Remember

63. Which question best captures the spirit of most individuals who study human development with regard to the nurture/nature question?
- a. How do genes and environmental factors interact in the development of memory processes?  
*Correct. Human development is influenced by both genes and environment.*
  - b. Which human behaviors are determined genetically, and which are determined by environmental factors?  
*Incorrect. Behavior is a collective contribution of both nature and nurture.*
  - c. At what age do environmental factors surpass genetic factors as most important in human development?
  - d. Which genes are responsible for childhood behavior, and which genes are responsible for adult behavior?

Answer: A

Difficulty: 3

Page: 51

Skill: A

Learning Objective: 2.3

Bloom's Taxonomy Level: Apply

64. A behavioral geneticist would use which of the following research methods to study the influence of genetics?
- a. longitudinal studies
  - b. cross-sectional studies
  - c. quasi-experimental studies
  - d. twin and adoption studies

Answer: D

Difficulty: 1

Page: 51

Skill: F

Learning Objective: 2.3

Bloom's Taxonomy Level: Remember

65. Monozygotic (MZ) twins are also known as \_\_\_\_.
- a. fraternal twins
  - b. identical twins
  - c. dizygotic twins
  - d. conjoined twins

Answer: B

Difficulty: 1

Page: 51

Skill: F

Learning Objective: 2.3

Bloom's Taxonomy Level: Remember

66. What percentage of their genes do monozygotic twins have in common?
- a. 40%
  - b. 60%
  - c. 80%
  - d. 100%

Answer: D

Difficulty: 1

Page: 51

Skill: F

Learning Objective: 2.3

Bloom's Taxonomy Level: Remember

67. Which of the following have a 100% genetic similarity to each other?
- a. brother and sister
  - b. dizygotic twins
  - c. cousins
  - d. monozygotic twins

Answer: D

Difficulty: 1

Page: 51

Skill: F

Learning Objective: 2.3

Bloom's Taxonomy Level: Remember

68. If temperament were genetically based, which of the following would have the greatest degree of similarity?
- a. monozygotic twins  
*Correct. Monozygotic twins have a 100% genetic similarity.*
  - b. dizygotic twins  
*Incorrect. Dizygotic twins have a 40 to 60% genetic similarity.*
  - c. parents and children
  - d. cousins

Answer: A

Difficulty: 1

Page: 51

Skill: C

Learning Objective: 2.3

Bloom's Taxonomy Level: Understand

69. Dizygotic (DZ) twins are also known as \_\_\_\_\_.
- a. fraternal twins  
*Correct. Dizygotic twins result when a woman releases two ova and both are fertilized by sperm.*
  - b. identical twins  
*Incorrect. Identical twins are monozygotic twins.*
  - c. monozygotic twins
  - d. conjoined twins

Answer: A

Difficulty: 1

Page: 51

Skill: C

Learning Objective: 2.3

Bloom's Taxonomy Level: Understand

70. You are pushing a stroller that has two babies in it. One boy, dressed in blue, and one girl, dressed in pink. Someone stops you tells you how beautiful your baby boy and girl are. Then they ask if they are "identical twins." You tell them they are not, but what are you thinking?
- a. It is impossible to have identical twins of different sexes.  
*Correct. Identical twins have exactly the same genotype, including sex.*
  - b. They could be identical; that was a great question.  
*Incorrect. Identical twins share 100% of their genes, so they would both be of the same sex.*
  - c. Fraternal twins are usually both girls.
  - d. Fraternal twins are usually both boys.

Answer: A

Difficulty: 1

Page: 51

Skill: A

Learning Objective: 2.3

Bloom's Taxonomy Level: Apply

% correct 85 a= 85 b= 13 c= 1 d= 1 r = .20

71. What percentage of their genes do dizygotic twins have in common?
- a. 100%
  - b. 70 to 90%
  - c. 40 to 60%
  - d. 10 to 30%

Answer: C

Difficulty: 1

Page: 51

Skill: F

Learning Objective: 2.3

Bloom's Taxonomy Level: Remember

72. Which of the following have a 40 to 60% similarity of genetic inheritance?
- a. identical twins
  - b. fraternal twins
  - c. cousins
  - d. adopted siblings

Answer: B

Difficulty: 1

Page: 51

Skill: F

Learning Objective: 2.3

Bloom's Taxonomy Level: Remember

73. What type of study allows researchers to study whether certain behaviors or traits are more closely related to their genetics or their environment?
- a. genetics
- Incorrect. Adoption studies examine the effects of environment.*
- b. temperament
  - c. chromosomal
  - d. adoption
- Correct. Adoption studies let researchers observe the behavior of parents and children who share no genetic material.*

Answer: D

Difficulty: 1

Page: 51

Skill: C

Learning Objective: 2.3

Bloom's Taxonomy Level: Understand

74. \_\_\_\_ is an estimate of the extent to which genes are responsible for the differences among persons within a specific population.
- a. Heritability
  - b. Reaction range
  - c. Genetic ratio
  - d. Environmental coefficient

Answer: A

Difficulty: 1

Page: 51–52

Skill: F

Learning Objective: 2.3

Bloom's Taxonomy Level: Remember

75. What is the name of the statistic that ranges from 0 to 1.00 and is used to estimate the degree to which genes are responsible for differences among people from a specific population?
- genetic correlation
  - heritability estimate
  - concordance rate
  - chromosomal correction

Answer: B

Difficulty: 1

Page: 52

Skill: F

Learning Objective: 2.3

Bloom's Taxonomy Level: Remember

76. The heritability estimate ranges from \_\_\_\_.
- 1 to 100
  - 0 to 1.00
  - 1 to 5
  - 0 to 20

Answer: B

Difficulty: 1

Page: 52

Skill: F

Learning Objective: 2.3

Bloom's Taxonomy Level: Remember

77. Professor Glossner proposes that the heritability of temperament is .80. Which of the following statements does Professor Glossner propose?
- A large portion of temperament is determined by genetics.  
*Correct. Heritability is an estimate of the extent to which genes are responsible for the differences among persons within a specific population. The value of the heritability estimate ranges from 0 to 1.00. The higher the heritability, the more the characteristic is believed to be influenced by genetics.*
  - A large portion of temperament is determined by environment.  
*Incorrect. From the estimate provided, 20% is determined by the environment.*
  - 80% of temperament is determined by the X chromosome.
  - 20% of temperament is determined by the X chromosome.

Answer: A

Difficulty: 2

Page: 52

Skill: C

Learning Objective: 2.3

Bloom's Taxonomy Level: Understand

78. Your friend's mother is extremely intelligent. As a result, even though he usually does OK in school (2.8 GPA), he is convinced that he is a genius. What do you think?
- Heritability estimates for intelligence are .50, so he is probably overestimating his intelligence.



*Correct. Heritability estimates for intelligence are .50, so given his GPA, it is likely that he is exaggerating his level of intelligence.*

- b. He is definitely correct; he is likely a genius.

*Incorrect. Heritability estimates for intelligence are .50, so given his GPA, it is likely that he is exaggerating his level of intelligence.*

- c. Actually, children of intellectually gifted adults are usually much lower in intelligence.  
d. With a 2.8 GPA, he must be correct.

Answer: A

Difficulty: 2

Page: 52

Skill: A

Learning Objective: 2.3

Bloom's Taxonomy Level: Apply

79. According to your text, what percentage of variation of intelligence is estimated to be attributed to genetics?
- a. 25%  
b. 50%  
c. 75%  
d. 100%

Answer: B

Difficulty: 1

Page: 52

Skill: F

Learning Objective: 2.3

Bloom's Taxonomy Level: Remember

80. What measure allows researchers to estimate not just genetic influence, but of how much the environment allows the genes to be expressed?
- a. genetic correlation  
b. heritability estimate  
*Correct. Heritability is an estimate of the extent to which genes are responsible for the differences among persons within a specific population.*  
c. concordance rate  
*Incorrect. The heritability estimate includes not just genetics, but how much the environment allows the genes to be expressed.*  
d. chromosomal correction

Answer: B

Difficulty: 1

Page: 52

Skill: C

Learning Objective: 2.3

Bloom's Taxonomy Level: Understand

81. Concordance rate is defined as \_\_\_\_.
- a. the degree of similarity in characteristics among peoples of a cultural group  
b. the influence of genes on development by comparing people who share different amounts of their genes  
c. the percentage that indicates the degree of similarity in phenotype among pairs of family members

- d. the degree of difference as expressed by variations in environment

Answer: C

Difficulty: 3

Page: 52

Skill: F

Learning Objective: 2.3

Bloom's Taxonomy Level: Remember

% correct 88 a= 6 b= 0 c= 88 d= 6 r = .29

82. If you were to design a research study that examines depression in relation to concordance rate, which of the following are the best groups to use for comparison?

- a. identical twins and fraternal twins

*Correct. Monozygotic twins are identical with a 100% genetic similarity and dizygotic twins are fraternal with a 50% genetic similarity. Therefore, twin studies are important in estimating concordance rate.*

- b. college students and the general public

- c. brothers and sisters

*Incorrect. Brothers and sisters have a 50% genetic similarity. Therefore, a comparison with the same environment will be of little value.*

- d. parent(s) and children

Answer: A

Difficulty: 2

Page: 52

Skill: A

Learning Objective: 2.3

Bloom's Taxonomy Level: Apply

83. When concordance rates are higher among monozygotic twins than dizygotic twins, this indicates which of the following?

- a. There is partially a genetic basis.

- b. There is partially an environmental basis.

- c. There is a 100% environmental cause.

- d. There is a 100% genetic cause.

Answer: A

Difficulty: 2

Page: 52

Skill: F

Learning Objective: 2.3

Bloom's Taxonomy Level: Remember

84. Which measure allows behavior geneticists to determine the percentage of similarity in phenotype among pairs of family members and is used mostly to examine mental disorders?

- a. genetic correlation

- b. heritability estimate

*Incorrect. Similarity of phenotypes is estimated with the concordance rate.*

- c. concordance rate

*Correct. Concordance rates range from 0 to 100%. The higher the concordance rate, the more similar two persons are.*

- d. chromosomal correction

Answer: C

Difficulty: 1

Page: 52

Skill: C

Learning Objective: 2.3

Bloom's Taxonomy Level: Understand

85. Which of the following pairs would have a higher concordance rate for schizophrenia?
- a. monozygotic twins
  - b. dizygotic twins
  - c. adopted siblings
  - d. cousins

Answer: A

Difficulty: 3

Page: 52

Skill: F

Learning Objective: 2.3

Bloom's Taxonomy Level: Remember

% correct 80 a= 80 b= 18 c= 1 d= 1 r = .38

86. If John has schizophrenia, how likely is it that his monozygotic twin brother will also have schizophrenia?
- a. John's brother will also have schizophrenia.
  - b. There is an 80% probability that John's brother will have schizophrenia.  
*Incorrect. There is a 50% probability that his identical twin will also have schizophrenia.*
  - c. There is a 50% probability that John's brother will have schizophrenia.  
*Correct. The concordance rate for schizophrenia among monozygotic, or identical, twins is 50%.*
  - d. John's brother will not have schizophrenia.

Answer: C

Difficulty: 1

Page: 52

Skill: A

Learning Objective: 2.3

Bloom's Taxonomy Level: Apply

87. If John has schizophrenia, how likely is it that his dizygotic twin brother will also have schizophrenia?
- a. John's brother will also have schizophrenia.
  - b. There is a 38% probability that John's brother will have schizophrenia.  
*Incorrect. There is an 18% probability that his fraternal twin will also have schizophrenia.*
  - c. There is an 18% probability that John's brother will have schizophrenia.  
*Correct. The concordance rate for schizophrenia among dizygotic, or fraternal, twins is 18%.*
  - d. John's brother will not have schizophrenia.

Answer: C

Difficulty: 1

Page: 52

Skill: A

Learning Objective: 2.3

Bloom's Taxonomy Level: Apply

88. The \_\_\_\_ is when genes establish boundaries for environmental influences rather than specifically denoting a particular characteristic.
- a. reaction range
  - b. nature-nurture debate
  - c. genetic ratio
  - d. concordance rate

Answer: A

Difficulty: 1

Page: 53

Skill: F

Learning Objective: 2.4

Bloom's Taxonomy Level: Remember

89. Genes establish a potential of expression and environment determines where a person's phenotype will fall. What is this boundary of genetic influence?
- a. environmental influence
  - b. gene boundaries
  - c. the inheritability estimate
  - d. the reaction range

*Incorrect. The boundary of genetic influence is the reaction range.*

*Correct. The reaction range is when genes establish boundaries for environmental influences.*

Answer: D

Difficulty: 2

Page: 53

Skill: C

Learning Objective: 2.4

Bloom's Taxonomy Level: Understand

90. The concept of reaction range proposes that \_\_\_\_ establish(es) boundaries, whereas \_\_\_\_ determines where a person falls within that range.
- a. genetics; environment
  - b. environment; genetics
  - c. phenotype; genotype
  - d. polygenetic inheritance; homogenetic inheritance

Answer: A

Difficulty: 2

Page: 53

Skill: F

Learning Objective: 2.4

Bloom's Taxonomy Level: Remember

% correct 53 a= 53 b= 12 c= 0 d= 29 r = .48

91. Elizabeth was just born. Her father is 6'8" tall and her mother is 5'11" tall. It is quite likely that Elizabeth will be tall as well. However, the environment will play a role in her eventual height as well. The genetic potential for Elizabeth's height is known as the \_\_\_\_.
- a. environmental range
  - b. reaction range

*Correct. The reaction range is when genes establish boundaries for environmental influences.*

- c. genetic range

*Incorrect. Elizabeth's genetic potential for height is her reaction range.*

- d. interaction range

Answer: B

Difficulty: 2

Page: 53

Skill: A

Learning Objective: 2.4

Bloom's Taxonomy Level: Apply

% correct 50 a= 9 b= 50 c= 32 d= 8 r = .40

92. Which of the following individuals illustrates a person who is closer to the peak of their reaction range?

- a. Samir was born with a potential IQ of 145 (gifted IQ), was raised in an educationally enriching environment, and is a highly motivated learner.

*Correct. Reaction range proposes that genetics establish limits, whereas one's environment places them on that scale. This means that Samir was born with a potential of an IQ of 145 and he is living within an environment that allows him to reach his fullest potential.*

- b. Joseppi, who was born with a potential IQ of 145 (gifted IQ), was raised in an educationally deprived environment and is an unmotivated learner.

*Incorrect. Joseppi has the genetic potential; however, his environment is limiting.*

- c. Susan was born with the potential IQ of 80 (below average IQ), was raised in an educationally deprived environment and is an unmotivated learner.

- d. Iman, who was born with the potential IQ of 80 (below average IQ), was raised in an educationally enriching environment and is an unmotivated learner who makes little progress.

Answer: A

Difficulty: 2

Page: 53

Skill: A

Learning Objective: 2.4

Bloom's Taxonomy Level: Apply

93. In the past few decades, the average height of adults in Western countries has not changed much. This indicates that adult height for these countries has reached the upper boundary of their \_\_\_\_.

- a. socio-economic range

- b. health status

- c. reaction range

*Correct. Reaction range proposes that genetics establish limits, whereas one's environment places them on that scale.*

- d. range of genetic dominance

*Incorrect. Adult height in Western countries has reached the upper boundary of their reaction range.*

Answer: C

Difficulty: 2

Page: 53

Skill: C

Learning Objective: 2.4

Bloom's Taxonomy Level: Understand

94. Sandra Scarr and Kathleen McCartney proposed the theory of genotype → environment effects. Which subtype occurs in biological families because parents provide both genes and environment for their children?
- a. passive genotype → environment effects  
*Correct. It's difficult to separate genetic influences from environmental influences because parents provide both.*
  - b. evocative genotype → environment effects  
*Incorrect. The genotype → environment effect in this case would be passive genotype → environment effect.*
  - c. active genotype → environment effects
  - d. inactive genotype → environment effects

Answer: A

Difficulty: 1

Page: 53

Skill: C

Learning Objective: 2.5

Bloom's Taxonomy Level: Understand

95. Sandra Scarr and Kathleen McCartney proposed the theory of genotype → environment effects. Which subtype occurs when a person's inherited characteristics bring about responses from others in their environment?
- a. passive genotype → environment effects  
*Incorrect. The genotype → environment effect in this case would be evocative genotype → environment effect.*
  - b. evocative genotype → environment effects  
*Correct. An example would be a parent who buys more books for a child who seems to enjoy reading and thereby encourages the expression of her inherited interest in reading.*
  - c. active genotype → environment effects
  - d. inactive genotype → environment effects

Answer: B

Difficulty: 1

Page: 54

Skill: C

Learning Objective: 2.5

Bloom's Taxonomy Level: Understand

96. Sandra Scarr and Kathleen McCartney proposed the theory of genotype → environment effects. Which subtype occurs when people seek out environments that correspond to their genotypic characteristics?
- a. Passive genotype → environment effects
  - b. Evocative genotype → environment effects
  - c. Active genotype → environment effects  
*Correct. An example would be an outgoing young adult seeking a career where she can interact with other people all day.*
  - d. Inactive genotype → environment effects  
*Incorrect. The genotype → environment effect in this case would be active genotype → environment effect.*

Answer: C

Difficulty: 1

Page: 54

Skill: C

Learning Objective: 2.5

Bloom's Taxonomy Level: Understand

% correct 81 a= 7 b= 10 c= 81 d= 2 r = .37

97. Which of the following is the best example of active genotype → environment effects?
- a. Since Jacob is good at math, his parents encourage further learning by playing math games with him each night.  
*Incorrect. The evocative genotype → environment results when a person's inherited characteristics evoke response from others.*
  - b. Because everyone in the Martin family burns easily, they rarely go to the beach and have moved to a colder weather State.  
*Correct. Active genotype → environment effects state that results occur when people seek out environments that correspond to their genotypic characteristics.*
  - c. Maria has a green thumb and can grow anything in her garden. When her children were small, they played in the garden next to her. As they grew up, each child decided to go into agricultural fields.
  - d. Millie was a very round baby and was big for her age. Everyone in her family made comments about her large size and nicknamed her "Big Millie."

Answer: B

Difficulty: 3

Page: 54

Skill: C

Learning Objective: 2.5

Bloom's Taxonomy Level: Apply

98. What are the only cells in the human body that do not contain 46 chromosomes?
- a. lens cells
  - b. neurons
  - c. hair cells
  - d. gametes

Answer: D

Difficulty: 1

Page: 57

Skill: F

Learning Objective: 2.6

Bloom's Taxonomy Level: Remember

% correct 81 a= 4 b= 8 c= 7 d= 81 r = .31

99. Human sex cells, sperm and ova, each contain how many chromosomes?
- a. 23
  - b. 46
  - c. 23 pairs
  - d. 46 pairs

Answer: A

Difficulty: 1

Page: 57

Skill: F

Learning Objective: 2.6

Bloom's Taxonomy Level: Remember

100. Sperm and ova are produced by which of the following, respectively?

- a. penis and uterus
- b. scrotum and vulva
- c. testes and ovaries
- d. kidneys and pancreas

Answer: C

Difficulty: 1

Page: 57

Skill: F

Learning Objective: 2.6

Bloom's Taxonomy Level: Remember

101. Through what process are gametes formed?

- a. mitosis
- b. meiosis
- c. sex differentiation
- d. dimorphic cell division

Answer: B

Difficulty: 1

Page: 57

Skill: F

Learning Objective: 2.6

Bloom's Taxonomy Level: Remember

102. What is the process of regular cell division called?

- a. mitosis
- b. meiosis
- c. sex differentiation
- d. dimorphic cell division

Answer: A

Difficulty: 1

Page: 57

Skill: F

Learning Objective: 2.6

Bloom's Taxonomy Level: Remember

103. \_\_\_\_\_ is known as the normal process of cell reproduction in which chromosomes duplicate themselves and the cells divide to become two cells.

- a. Meiosis
- b. Mitosis
- c. Polar bodies
- d. Crossing over

Answer: B

Difficulty: 2

Page: 57

Skill: F

Learning Objective: 2.6

Bloom's Taxonomy Level: Remember

104. In the process of meiosis, how many chromosomes does the cell originally have, and how many chromosomes are present when the gametes are formed?



- a. 92, 46
- b. 69, 46
- c. 46, 23
- d. 23, 23

Answer: C

Difficulty: 1

Page: 57

Skill: F

Learning Objective: 2.6

Bloom's Taxonomy Level: Remember

105. At the conclusion of meiosis, how many sperm cells have been formed?

- a. 2
- b. 4
- c. 8
- d. 16

Answer: B

Difficulty: 2

Page: 57

Skill: F

Learning Objective: 2.6

Bloom's Taxonomy Level: Remember

106. At the conclusion of meiosis, how many ova have been formed?

- a. 1 with 3 polar bodies
- b. 2 with 2 polar bodies
- c. 3 with 1 polar body
- d. 4 with no polar bodies

Answer: A

Difficulty: 1

Page: 57

Skill: F

Learning Objective: 2.6

Bloom's Taxonomy Level: Remember

107. According to the text, why does the ovum have an excessive amount of cytoplasm?

- a. so that there is ample room for the sperm's nucleus once it arrives
- b. to help protect against invading cells
- c. so that the ovum can be easily found by the sperm cells
- d. it will be the ovum's main source of nutrition

*Incorrect. Cytoplasm will be the main source of nutrition for the ovum.*

*Correct. Cytoplasm is the ovum's source of nutrients for the first two weeks after fertilization.*

Answer: D

Difficulty: 1

Page: 57

Skill: C

Learning Objective: 2.6

Bloom's Taxonomy Level: Understand

108. What is the process that allows mixing the combinations of genes in a single chromosome, resulting in a virtually infinite possible combination of genes?
- a. sampling from a large genetic pool
  - b. gamete swapping
  - c. crossing over
  - d. mitosis

Answer: C

Difficulty: 1

Page: 57–58

Skill: F

Learning Objective: 2.6

Bloom's Taxonomy Level: Remember

109. The typical male ejaculation expels how many sperm?
- a. 100 to 300
  - b. 100 to 300 thousand
  - c. 100 to 300 million
  - d. 100 to 300 billion

Answer: C

Difficulty: 2

Page: 58

Skill: F

Learning Objective: 2.6

Bloom's Taxonomy Level: Remember

110. Males begin producing sperm \_\_\_\_, whereas females produce ova \_\_\_\_.
- a. at puberty; at puberty
  - b. while in the womb; at puberty
  - c. at puberty; while in the womb
  - d. while in the womb; while in the womb

Answer: C

Difficulty: 2

Page: 58

Skill: F

Learning Objective: 2.6

Bloom's Taxonomy Level: Remember

111. How many ova are present in a female adolescent's ovaries in puberty?
- a. 20,000
  - b. 40,000
  - c. 60,000
  - d. 80,000

Answer: B

Difficulty: 1

Page: 58

Skill: F

Learning Objective: 2.6

Bloom's Taxonomy Level: Remember

112. Most women will run out of fertile ova by the time they reach their \_\_\_\_.
- a. 30s

- b. 40s
- c. 50s
- d. 60s

Answer: B

Difficulty: 1

Page: 58

Skill: F

Learning Objective: 2.6

Bloom's Taxonomy Level: Remember

113. Lamar and Chandra recently got married and have been discussing how long they could wait to have children. Based upon the text, at what age, statistically speaking, will Chandra run out of fertile ova?

a. 30s

*Incorrect. Most women run out of ova at some point in their 40s.*

b. 40s

*Correct. By contrast, men produce sperm throughout their adult lives, although the quality and quantity may decline with age.*

c. 50s

d. 60s

Answer: B

Difficulty: 1

Page: 58

Skill: A

Learning Objective: 2.6

Bloom's Taxonomy Level: Apply

114. How many days into the woman's menstrual cycle does ovulation occur?

a. 2

b. 14

c. 28

d. 40

Answer: B

Difficulty: 1

Page: 58

Skill: F

Learning Objective: 2.7

Bloom's Taxonomy Level: Remember

115. Fertilization is most likely to occur when intercourse occurs \_\_\_\_.

a. within 2 days before and on the day of ovulation

*Correct. It can take sperm from a few hours to a whole day to travel up the fallopian tubes.*

b. 2 days after ovulation

*Incorrect. Fertilization is likely to occur within two days before and on the day of ovulation.*

c. 5 days after ovulation

d. 1 week after ovulation

Answer: A

Difficulty: 1

Page: 58–59

Skill: C

Learning Objective: 2.7

Bloom's Taxonomy Level: Understand

116. According to the text, how long can sperm live in the woman's body after ejaculation?
- a. 12 hours
  - b. 1 day
  - c. 5 days
  - d. 1 week

Answer: C

Difficulty: 1

Page: 59

Skill: F

Learning Objective: 2.7

Bloom's Taxonomy Level: Remember

117. When the ovum and sperm cells unite and fertilization has occurred, what has just been formed?
- a. the fetus
  - b. the embryo
  - c. the blastocyst
  - d. the zygote

*Incorrect. When the ovum and sperm cells unite, the zygote has been formed.*

*Correct. The zygote's 46 paired chromosomes constitute the new organism's unique*

*genotype.*

Answer: D

Difficulty: 1

Page: 59

Skill: C

Learning Objective: 2.7

Bloom's Taxonomy Level: Understand

118. There are between 100 and 300 million sperm in one ejaculation. How many will make it to the ovum during sexual intercourse?
- a. 5 million
  - b. 500,000 thousand
  - c. 1000
  - d. less than a few hundred

Answer: D

Difficulty: 1

Page: 58

Skill: F

Learning Objective: 2.7

Bloom's Taxonomy Level: Remember

119. When the ovum is fertilized by the sperm, this is called \_\_\_\_.
- a. fertility
  - b. conception
  - c. cervix
  - d. gametes

Answer: B

Difficulty: 2

Page: 59

Skill: F

Learning Objective: 2.7

Bloom's Taxonomy Level: Remember

120. Which of the following has increased due to advancements in fertility treatments?
- a. monozygotic twins
  - b. dizygotic twins
  - c. conjoined twins
  - d. Siamese twins

Answer: B

Difficulty: 2

Page: 59

Skill: F

Learning Objective: 2.7

Bloom's Taxonomy Level: Remember

## Short Answer Questions

121. Give an example that explains the difference between phenotype and genotypes.

**Answer: Two identical twins will have the same genotype because their genetic makeup is exactly the same, but if they were adopted into homes with parents who had different views about health, they may have different phenotypes. One may be overweight because eating junk food is the norm, whereas the other twin may have a trim athletic build because fitness was always a part of the family's routine and involvement in sports was encouraged.**

Page: 46–47

Learning Objective: 2.1

Bloom's Taxonomy Level: Apply

122. You have likely heard people say, "The father is the one who determines the sex of the child." Explain whether or not this is true.

**Answer: Females' eggs have two X chromosomes and males' sperm contains either an X or a Y. When a zygote is formed, it always gets an X from the female, but it can get either an X or a Y from the male. If it gets a Y, the result is a male; if it gets an X, it becomes a female.**

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Learning Objective: 2.2

Bloom's Taxonomy Level: Understand

123. Although often viewed as the stronger sex, explain why males are actually more vulnerable.

**Answer: Because the sex chromosome of females is composed of two Xs, if one of these Xs contains a recessive gene for a disorder or disease, it will not manifest itself due to the other X overriding it and not allowing it to be expressed. Since the sex chromosome makeup of the male is XY, if there is a recessive gene for a disorder on his X chromosome, it will express itself because there is not another X chromosome that may contain a dominant gene to block its expression.**

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Learning Objective: 2.2

Bloom's Taxonomy Level: Understand

124. The concordance rate for schizophrenia among identical twins is .40; the concordance rate for schizophrenia is only .10 if a person's parent has schizophrenia. Explain what these numbers mean. Include a discussion of nature and nurture in your response.

**Answer:** This means that if one MZ twin has schizophrenia, there is a 40% chance that the other twin will also develop this disorder, whereas there is only a 10% chance of developing it if your mother or father has it. The higher rate for identical twins means that there is a genetic component to schizophrenia. However, there is still a 60% chance of not getting schizophrenia if your MZ has it, so environment plays a greater role than genes.

Page: 49–50

Learning Objective: 2.3

Bloom's Taxonomy Level: Understand

125. What is a reaction range? Provide an example to illustrate.

**Answer:** A reaction range refers to the range of possibilities that a person is capable of as set forth by their genetic makeup. It is similar to one's genetic potential. If a person's parents are both short in stature with a petite frame, it is genetically possible that the child will have a body type suitable to be a jockey. However, the environment plays an important role; if the person eats a high fat diet and does not maintain her health, she may not have the trim, strong build required for this work.

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Learning Objective: 2.4

Bloom's Taxonomy Level: Apply

## Essay Questions

126. Explain the phenomenon of incomplete dominance in sickle cell inheritance.

**Answer:** Incomplete dominance occurs when there is a dominant-recessive pair of genes and the phenotype is affected mostly by the dominant gene, but the recessive gene also becomes expressed partially. In sickle cell anemia, a person inherits two recessive genes for the sickle-cell trait and their blood cells are disk-shaped rather than round, causing clogging and a number of problems, such as pain. If the person only inherits one recessive gene for the sickle cell trait, they will not have sickle cell anemia, but some of their blood cells will be misshaped. This condition causes resistance to malaria, an often fatal disease that is common in Africa. It would be adaptive to carry this recessive trait in Africa, so this explains the higher prevalence of sickle-cell diseases among people of African heritage.

Page: 47–48

Learning Objective: 2.1

Bloom's Taxonomy Level: Apply

127. Explain how DZ and MZ twins are formed. Include a discussion of ethnic variations and factors that increase the chances of having twins.

**Answer:** DZ twins result when the female releases two eggs instead of one and each is fertilized with a sperm. MZ twins result when a zygote is formed and it divides. DZ twins are more common among Africans and least common among Asians. MZ twins are not more common in some ethnic groups. The chances of having DZ twins increase if they run in the family, if the person is in good health and if the mother is older. None of these variables predicts MZ twins.

Page: 59

Learning Objective: 2.7

Bloom's Taxonomy Level: Understand

# TOTAL ASSESSMENT GUIDE

## Chapter 2-Section 2

### Genetics and Prenatal Development

Topic		Remember	Understand	Apply
<b>Learning Objective 2.8</b>	Multiple Choice	1, 2, 3, 5, 7, 9, 11, 12, 13	4, 6, 8, 10	
	Short Answer			
	Essay		110	
<b>Learning Objective 2.9</b>	Multiple Choice	14, 15, 17, 21, 23, 24	16, 18, 19, 20, 22, 25, 26, 27	
	Short Answer			
	Essay			
<b>Learning Objective 2.10</b>	Multiple Choice	29, 31, 33, 34, 39, 41, 42, 43, 44, 48	28, 30, 35, 36, 45, 46, 47, 49, 50, 52, 53	32, 37, 38, 40, 51, 54
	Short Answer	105		
	Essay		96	111
<b>Learning Objective 2.11</b>	Multiple Choice	60, 61, 62	55, 56, 57, 58, 59, 64, 65	63
	Short Answer		106, 107, 109	
	Essay			
<b>Learning Objective 2.12</b>	Multiple Choice	72, 76, 79, 80, 82, 83, 84, 86, 88, 89, 92, 93, 96, 101, 102, 104	67, 68, 69, 71, 73, 75, 77, 78, 81, 85, 87, 90, 91, 94, 95, 97, 98, 99, 100	66, 70, 74, 103
	Short Answer		108	
	Essay			



## Section 2 Prenatal Development and Prenatal Care

### Test Item File

#### Multiple Choice Questions

1. What are the first 2 weeks after fertilization referred to as?
- the germinal period
  - the embryonic period
  - the fetal period
  - the fertilization period

Answer: A

Difficulty: 1

Page: 61–62

Skill: F

Learning Objective: 2.8

Bloom's Taxonomy Level: Remember

2. The first 2 weeks after fertilization is known as \_\_\_\_.
- conception
  - the germinal period
  - the embryonic period
  - the fetal period

Answer: B

Difficulty: 1

Page: 62

Skill: F

Learning Objective: 2.8

Bloom's Taxonomy Level: Remember

% correct 94 a= 0 b= 94 c= 6 d= 0 r = .18

3. By the end of the first week following conception, the fertilized egg now has approximately 100 cells and is known as the \_\_\_\_.
- neonate
  - fetus
  - embryo
  - blastocyst

Answer: D

Difficulty: 2

Page: 62

Skill: F

Learning Objective: 2.8

Bloom's Taxonomy Level: Remember

% correct 46 a= 15 b= 23 c= 15 d= 46 r = .47

4. Which of the following is a correct sequence of development during the germinal period?
- placenta, implantation, blastocyst
- Incorrect. During the germinal period, the zygote divides and forms the blastocyst, which implants in the uterus and begins forming the amnion, placenta, and umbilical cord.*
- blastocyst, implantation, placenta

*Correct. During the germinal period, the zygote divides and forms the blastocyst, which implants in the uterus and begins forming the amnion, placenta, and umbilical cord.*

- c. placenta, blastocyst, implantation
- d. implantation, placenta, blastocyst

Answer: B

Difficulty: 3

Page: 62

Skill: C

Learning Objective: 2.8

Bloom's Taxonomy Level: Understand

5. The blastocyst will implant itself into the uterine wall during the \_\_\_\_ after conception.
- a. first day
  - b. second day
  - c. first week
  - d. second week

Answer: D

Difficulty: 2

Page: 62

Skill: F

Learning Objective: 2.8

Bloom's Taxonomy Level: Remember

6. When the blastocyst becomes firmly embedded into the lining of the uterus, what has happened?
- a. implantation
- Correct. This occurs during the second week after conception.*
- b. fertilization
- Incorrect. When the blastocyst becomes embedded into the uterus, implantation has occurred.*
- c. conception
  - d. pregnancy

Answer: A

Difficulty: 1

Page: 62

Skill: C

Learning Objective: 2.8

Bloom's Taxonomy Level: Understand

7. When does implantation of the blastocyst occur?
- a. at conception
  - b. during the second week after conception
  - c. during the second month after conception
  - d. during the second trimester after conception

Answer: B

Difficulty: 2

Page: 62

Skill: F

Learning Objective: 2.8

Bloom's Taxonomy Level: Remember

8. According to the text, what structure provides a protective environment in which the fetus's temperature is well regulated and protects the fetus from friction caused by the mother's movements?
- a. the placenta
  - b. the umbilical cord
  - c. the amnion
  - d. the germinal structure
- Incorrect. The amnion protects the fetus.*
- Correct. The amnion develops from the trophoblast during the second week during the second week after conception.*

Answer: C

Difficulty: 2

Page: 62

Skill: C

Learning Objective: 2.8

Bloom's Taxonomy Level: Understand

% correct 64 a= 36 b= 0 c= 64 d= 0 r = .21

9. The outer layer of cells that will form the structures that will provide protection and nourishment for the newly formed organism is the \_\_\_\_.
- a. umbilical cord
  - b. placenta
  - c. embryonic disk
  - d. trophoblast

Answer: D

Difficulty: 3

Page: 62

Skill: F

Learning Objective: 2.8

Bloom's Taxonomy Level: Remember

10. The inner layer of the blastocyst that will become the embryo is the \_\_\_\_.
- a. umbilical cord
  - b. placenta
  - c. embryonic disk
  - d. trophoblast
- Incorrect. The inner layer of the blastocyst is the embryonic disk.*
- Correct. This is part of the blastocyst that is formed about one week after conception.*

Answer: C

Difficulty: 2

Page: 62

Skill: C

Learning Objective: 2.8

Bloom's Taxonomy Level: Understand

11. The \_\_\_\_ is/are the organ(s) that allow(s) nutrients to pass from the mother to the child and allow(s) waste to pass from the child to the mother during the course of pregnancy.
- a. uterus
  - b. placenta
  - c. fallopian tubes
  - d. ovaries

Answer: B

Difficulty: 1

Page: 62

Skill: F

Learning Objective: 2.8

Bloom's Taxonomy Level: Remember

12. What structure provides nutrients from the mother to the fetus, takes waste products away from the fetus, and protects the fetus from bacteria and waste in the mother's blood?
- the placenta
  - the umbilical cord
  - the amnion
  - the germinal structure

Answer: A

Difficulty: 2

Page: 62

Skill: F

Learning Objective: 2.8

Bloom's Taxonomy Level: Remember

% correct 35 a= 35 b= 41 c= 12 d= 0 r = .42

13. What percentage of blastocysts do not implant successfully?
- 15%
  - 25%
  - 50%
  - 75%

Answer: C

Difficulty: 1

Page: 62

Skill: F

Learning Objective: 2.8

Bloom's Taxonomy Level: Remember

14. The embryonic period lasts from the \_\_\_\_ to the \_\_\_\_.
- 1st week; 4th week
  - 3rd week; 8th week
  - 6th week; 16th week
  - 12th week; 32nd week

Answer: B

Difficulty: 2

Page: 62

Skill: F

Learning Objective: 2.9

Bloom's Taxonomy Level: Remember

% correct 78 a= 17 b= 78 c= 2 d= 3 r = .40

15. The embryonic period is \_\_\_\_ weeks long.
- 4
  - 6
  - 8
  - 10

Answer: B

Difficulty: 1

Page: 62

Skill: F

Learning Objective: 2.9

Bloom's Taxonomy Level: Remember

16. During the embryonic period, the ectoderm is formed, which will become the \_\_\_\_.
- a. skin, hair, nails, sensory organs and nervous system  
*Correct. The ectoderm is formed within the third week after conception.*
  - b. muscles, bones, reproductive system and circulatory system  
*Incorrect. During the embryonic period, the ectoderm will become the skin, hair, nails, sensory organs and nervous system.*
  - c. digestive and respiratory systems
  - d. hormonal and endocrine systems

Answer: A

Difficulty: 2

Page: 62

Skill: C

Learning Objective: 2.9

Bloom's Taxonomy Level: Understand

17. The outer layer of the embryonic disk will become \_\_\_\_.
- a. the brain and spinal cord
  - b. skin, hair, nails, and the nervous system
  - c. muscle, bones, and the circulatory system
  - d. the digestive and respiratory systems

Answer: B

Difficulty: 3

Page: 62

Skill: F

Learning Objective: 2.9

Bloom's Taxonomy Level: Remember

18. During the embryonic period, the mesoderm is formed, which will become the \_\_\_\_.
- a. skin, hair, nails, sensory organs, and nervous system
  - b. muscles, bones, reproductive system, and circulatory system  
*Correct. The mesoderm is formed within the third week after conception.*
  - c. digestive and respiratory systems  
*Incorrect. During the embryonic period, the mesoderm is formed, which will become the muscles, bones, reproductive system and circulatory system.*
  - d. hormonal and endocrine systems

Answer: B

Difficulty: 2

Page: 62

Skill: C

Learning Objective: 2.9

Bloom's Taxonomy Level: Understand

19. During the embryonic period, the endoderm is formed, which will become the \_\_\_\_.
- a. skin, hair, nails, sensory organs and nervous system

*Incorrect. During the embryonic period, the endoderm is formed, which will become the digestive and respiratory systems.*

- b. muscles, bones, reproductive system and circulatory system
- c. digestive and respiratory systems

*Correct. The endoderm is formed within the third week after conception.*

- d. hormonal and endocrine systems

Answer: C

Difficulty: 2

Page: 62

Skill: C

Learning Objective: 2.9

Bloom's Taxonomy Level: Understand

20. What embryonic structure will become the brain and spinal cord?

- a. brain stem
- b. neuralblast

*Incorrect. The neural tube will become the brain and spinal cord.*

- c. neural tube

*Correct. The neural tube is formed by the end of the third week after conception.*

- d. cerebral cortex

Answer: C

Difficulty: 2

Page: 62

Skill: C

Learning Objective: 2.9

Bloom's Taxonomy Level: Understand

% correct 65 a= 12 b= 6 c= 65 d= 18 r = .50

21. By the end of the third week, the neural tube begins to form. This structure will eventually become \_\_\_\_.

- a. the skull and torso
- b. the legs and arms
- c. the spinal cord and brain
- d. the lungs and the digestive system

Answer: C

Difficulty: 2

Page: 62

Skill: F

Learning Objective: 2.9

Bloom's Taxonomy Level: Remember

% correct 98 a= 0 b= 0 c= 98 d= 2 r = .22

22. Damage to the neural tube would consist of:

- a. problems with the formation of the digestive system.
- b. the umbilical cord not connecting the placenta to the uterus.

*Incorrect. The umbilical cord is not the neural tube.*

- c. the skin not developing pores and hair follicles.
- d. the spinal cord and brain not developing correctly.

*Correct. The neural tube is formed by the end of the third week after conception and creates the brain and spinal cord.*

Answer: D

Difficulty: 2

Page: 62

Skill: C

Learning Objective: 2.9

Bloom's Taxonomy Level: Understand

23. At what rate are neurons produced during the embryonic period?
- a. 25 per minute
  - b. 250 per minute
  - c. 250,000 per minute
  - d. 2 billion per minute

Answer: C

Difficulty: 1

Page: 62

Skill: F

Learning Objective: 2.9

Bloom's Taxonomy Level: Remember

24. By the end of the fourth week, the embryo's head is apparent and the eyes, nose, mouth, and ears begin to form. How long is the embryo at this point?
- a. 1/4 inch
  - b. 4 inches
  - c. 8 inches
  - d. 12 inches

Answer: A

Difficulty: 1

Page: 62

Skill: F

Learning Objective: 2.9

Bloom's Taxonomy Level: Remember

25. Nearly all of the major organs are formed during what period?
- a. genetic
  - b. zygotic
  - c. fetal
  - d. embryonic
- Incorrect. The major organs are formed during the embryonic period.*
- Correct. This period lasts from the third to eighth week after conception.*

Answer: D

Difficulty: 2

Page: 63

Skill: C

Learning Objective: 2.9

Bloom's Taxonomy Level: Understand

% correct 63 a= 0 b= 7 c= 29 d= 63 r = .33

26. At the end of the eighth week, the embryo is only one inch long and weighs just one gram. According to the text, what can the embryo now do?
- a. step in place
  - b. suck its thumb
- Incorrect. The embryo can respond to touch during this time.*

- c. vocalize
- d. respond to touch

*Correct. The embryo's sense of touch is especially sensitive around its mouth at this point.*

Answer: D

Difficulty: 2

Page: 63

Skill: C

Learning Objective: 2.9

Bloom's Taxonomy Level: Understand

27. By the end of the eighth week, the embryo \_\_\_\_.

- a. is unrecognizable as human
- b. responds to touch and can move

*Correct. The embryo's sense of touch is especially sensitive around its mouth at this point.*

- c. has yet to develop major organs
- d. has fully developed sex organs

*Incorrect. By the end of the eighth week, the embryo responds to touch and all of the main organs are formed except the sex organs.*

Answer: B

Difficulty: 2

Page: 63

Skill: C

Learning Objective: 2.9

Bloom's Taxonomy Level: Understand

28. The fetal period ends at birth. When does it begin?

- a. 4 weeks after conception

*Incorrect. The fetal period begins nine weeks after conception.*

- b. 9 weeks after conception

*Correct. The fetal period follows the embryonic period.*

- c. 12 weeks after conception
- d. 15 weeks after conception

Answer: B

Difficulty: 2

Page: 63

Skill: C

Learning Objective: 2.10

Bloom's Taxonomy Level: Understand

29. The \_\_\_\_ period lasts from the ninth week after conception until birth.

- a. germinal
- b. embryonic
- c. fetal
- d. zygote

Answer: C

Difficulty: 1

Page: 63

Skill: F

Learning Objective: 2.10



Bloom's Taxonomy Level: Remember

30. Fernando and Rebecca are anxious to know the sex of their baby. It would not be until the end of the \_\_\_\_ month of pregnancy that they can find out, because the genitalia will not have fully formed before then.
- a. 2nd
  - b. 3rd
  - c. 4th
  - d. 5th
- Correct. Fingernails, toenails, and taste buds begin to develop at the same time.*  
*Incorrect. By the end of the third month, genitalia are formed.*

Answer: B

Difficulty: 2

Page: 63

Skill: C

Learning Objective: 2.10

Bloom's Taxonomy Level: Understand

31. According to the text, how early can the fetus's heartbeat be heard with a stethoscope?
- a. during the third week
  - b. during the third month
  - c. during the fifth month
  - d. during the seventh month

Answer: B

Difficulty: 1

Page: 63

Skill: F

Learning Objective: 2.10

Bloom's Taxonomy Level: Remember

32. Your friend just had her first pregnancy check-up and is just starting her second month of pregnancy. She is very upset that she was not given the chance to hear her fetus's heartbeat. Remembering what you learned in developmental class, what should you tell her?
- a. That probably means that the fetus died.
  - b. She will not be able to hear the heartbeat with a stethoscope until the third month.
  - c. The fetus probably has a heart problem.
  - d. The doctor did not want her to hear the fetal heartbeat.
- Incorrect. It is not likely that the heartbeat can be heard until the third month.*  
*Correct. It is not until the third month of pregnancy that a fetal heartbeat can typically be heard using a stethoscope.*

Answer: B

Difficulty: 2

Page: 63

Skill: A

Learning Objective: 2.10

Bloom's Taxonomy Level: Apply

33. At three months, the average fetus \_\_\_\_.
- a. weighs three ounces and is three inches long
  - b. weighs three pounds and is three inches long

- c. has developed three brain structures
- d. has developed three sensory systems

Answer: A

Difficulty: 1

Page: 63

Skill: F

Learning Objective: 2.10

Bloom's Taxonomy Level: Remember

34. By the end of the third month, the typical fetus can be described as “three times three” because \_\_\_\_.
- a. it has been three months, the fetus weighs three ounces, and is three inches long
  - b. it weighs three pounds, is three inches long, and has three senses
  - c. three major systems have developed: brain, heart, and lungs
  - d. all three facial features are clearly distinguishable

Answer: A

Difficulty: 2

Page: 63

Skill: F

Learning Objective: 2.10

Bloom's Taxonomy Level: Remember

35. Prenatal development is divided into segments. What are these segments called?
- a. fetalesters
  - b. prenatal sections
  - c. semesters
  - d. trimesters
- Incorrect. These segments are referred to as trimesters.*
- Correct. Prenatal development is divided into 3-month trimesters.*

Answer: D

Difficulty: 1

Page: 63

Skill: C

Learning Objective: 2.10

Bloom's Taxonomy Level: Understand

36. By the end of what month do pregnant women typically feel the movements of the fetus?
- a. second
  - b. fourth
  - c. sixth
  - d. eight
- Correct. The fetus's movements diversify over the course of the second trimester.*
- Incorrect. Pregnant women typically feel the movement of the fetus during the fourth month.*

Answer: B

Difficulty: 1

Page: 63

Skill: C

Learning Objective: 2.10

Bloom's Taxonomy Level: Understand

37. Your sister-in-law just finished her fourth month of pregnancy. She swears that she can feel the movements of her fetus. Is this likely? After what month do women generally feel the fetus move?

- a. Yes, she has probably been feeling the fetus move since the second month.
- b. Yes, pregnant women can usually begin feeling the fetus's movements by the fourth month of pregnancy.

*Correct. The fetus's movements begin to diversify at this time, and include kicking, hiccupping, and thumb sucking.*

- c. No, the fetus is not developed enough to move very much until the end of the sixth month of pregnancy.

*Incorrect. Pregnant women typically feel the movement of the fetus during the fourth month.*

- d. No, it is very difficult for a pregnant woman to feel the fetus's movement until the fetus is viable, during the 8th month of pregnancy.

Answer: B

Difficulty: 1

Page: 63

Skill: A

Learning Objective: 2.10

Bloom's Taxonomy Level: Apply

38. Susan is talking to her friend, who is at the end of her second trimester. Lucila wants to be reassured that she is not crazy, but thinks her baby actually kicks, turns, and hiccups. Lucila even thinks that the baby becomes more active if she talks to it. If you were Susan, how would you respond to Lucila's observations?

- a. "Lucila, those activities are normal for the end of the second trimester, and fetuses can hear even in the womb."

*Correct. These are all normal actions and responses for a pregnant woman to feel.*

- b. "Lucila, I think you are going crazy. A fetus really doesn't kick that early in the pregnancy and it's crazy to think it can hear."

- c. "Lucila, all those things do happen, but not really until the end of the third trimester."

*Incorrect. During the second trimester, the mother can feel movement from the fetus. The fetus kicks, turns, hiccups, sucks its thumb, breathes amniotic fluid, and responds to sounds, especially music and familiar voices.*

- d. "Lucila, I think you need to go see your doctor because something is absolutely wrong."

Answer: A

Difficulty: 2

Page: 63

Skill: A

Learning Objective: 2.10

Bloom's Taxonomy Level: Apply

39. What is the name of the white slimy substance that covers the fetus's skin?

- a. lanugo
- b. vernix
- c. keratin
- d. ossicles

Answer: B

Difficulty: 2

Page: 63

Skill: F

Learning Objective: 2.10

Bloom's Taxonomy Level: Remember

40. A fellow worker was present at his son's birth. He was really upset because his son was born with a white substance all over his skin and no one told him what the problem was. You should tell him \_\_\_\_.
- a. that it was probably cancer
  - b. that his baby probably had something wrong with it. You have never heard of such a thing.
- Incorrect. The white substance is called vernix and is normal.*
- c. that the white substance was vernix and many babies have that at birth. It protects their skin in utero.
- Correct. The white substance is called vernix and is normal.*
- d. that that was a greasy like substance that is used to help the baby emerge from the birth canal. They will wash it off later.

Answer: C

Difficulty: 2

Page: 63

Skill: A

Learning Objective: 2.10

Bloom's Taxonomy Level: Apply

% correct 82 a= 0 b= 0 c= 82 d= 12 r = .20

41. The purpose of lanugo is to \_\_\_\_.
- a. work as a lubricant during the birthing process
  - b. lubricate the lungs
  - c. guide neuro-migration during brain development
  - d. help the vernix stick to the fetus's skin, which protects against chapping

Answer: D

Difficulty: 2

Page: 63

Skill: F

Learning Objective: 2.10

Bloom's Taxonomy Level: Remember

42. What is the name of the downy hair that covers the fetus?
- a. lanugo
  - b. vernix
  - c. keratin
  - d. ossicles

Answer: A

Difficulty: 1

Page: 63

Skill: F

Learning Objective: 2.10

Bloom's Taxonomy Level: Remember

43. What is the term used to describe the fetus's likelihood of surviving outside of the uterus?
- a. survival index

- b. Apgar Score
- c. Braxton Hicks
- d. viability

Answer: D

Difficulty: 1

Page: 63

Skill: F

Learning Objective: 2.10

Bloom's Taxonomy Level: Remember

% correct 53 a= 24 b= 0 c= 18 d= 53 r = .35

44. \_\_\_\_\_ is the term for an infant's ability to survive outside the womb if born preterm/premature.
- a. Immaturity
  - b. Small for size
  - c. Viability
  - d. Survivability

Answer: C

Difficulty: 1

Page: 63

Skill: F

Learning Objective: 2.10

Bloom's Taxonomy Level: Remember

45. What is the likely outcome for a fetus whose mother lives in a developing country and is born before the end of the second trimester? The newborn will probably \_\_\_\_\_.
- a. not survive  
*Correct. Access to the necessary advanced medical care is scarce in developing countries, so the newborn's chances of survival are not strong.*
  - b. be healthy  
*Incorrect. It is more likely that the newborn will not survive.*
  - c. have an Apgar score of at least 7
  - d. have a breech birth

Answer: A

Difficulty: 1

Page: 63–64

Skill: C

Learning Objective: 2.10

Bloom's Taxonomy Level: Understand

46. The last major organ system to develop during fetal life is the \_\_\_\_\_.
- a. heart  
*Incorrect. The last major organs to develop are the lungs.*
  - b. lungs  
*Correct. Even a baby born in the seventh or eighth month of pregnancy may need the help of a respirator to breathe.*
  - c. intestines
  - d. skeletal muscles

Answer: B

Difficulty: 1

Page: 64

Skill: C

Learning Objective: 2.10

Bloom's Taxonomy Level: Understand

% correct 68 a= 8 b= 68 c= 7 d= 17 r = .27

47. Newborns weighing less than what weight are at risk for a wide range of developmental difficulties?

a. 5.5 pounds

*Correct. Many of these developmental difficulties will be discussed in Chapter 3.*

b. 7.0 pounds

*Incorrect. Newborns weighing less than 5.5 pounds are at risk.*

c. 8.5 pounds

d. 10 pounds

Answer: A

Difficulty: 1

Page: 64

Skill: C

Learning Objective: 2.10

Bloom's Taxonomy Level: Understand

48. As a result of evolutionary history, which of the following structures is the most underdeveloped at birth?

a. the lungs

b. the spinal cord

c. the brain

d. the digestive system

Answer: C

Difficulty: 2

Page: 64

Skill: F

Learning Objective: 2.10

Bloom's Taxonomy Level: Remember

49. Humans are born with immature brains that are incompletely developed. One result is that babies \_\_\_\_\_.

a. are less vulnerable to environmental difficulties

*Incorrect. The environment has a greater effect and parental care is required for a longer period than with other animals.*

b. learn to care for themselves very quickly

c. have a genetic resistance to infection

d. require parental care for a longer time than other animals

*Correct. As we learned in Chapter 1, this is a result of evolutionary history.*

Answer: D

Difficulty: 1

Page: 64

Skill: C

Learning Objective: 2.10

Bloom's Taxonomy Level: Understand

50. It has been discovered that the fetus responds to sound at the end of the sixth month. What sound does the fetus prefer at this time?

- a. Mozart's music

*Incorrect. At the sixth month, the fetus is likely to respond to its mother's voice.*

- b. rhythmic tapping

- c. its mother's voice

*Correct. We know this is true because an increase in fetal heart rate is observed when a fetus hears its mother's voice.*

- d. a cat's meow

Answer: C

Difficulty: 2

Page: 64

Skill: C

Learning Objective: 2.10

Bloom's Taxonomy Level: Understand

51. Your roommate's sister-in-law is pregnant and is trying to do all that she can to protect her fetus and to make sure that her fetus develops well. She does not like to have any loud music on and even does not talk very loudly for fear that her fetus will be harmed. What would you tell her?

- a. That her fetus will not be adversely affected and that studies have discovered that fetuses actually prefer their mothers' voices. So, she should talk as much as she likes.

*Correct. A fetus's heart rate has been shown to increase when it hears its mother's voice.*

- b. That she is correct; loud music is readily transmitted through the amniotic fluid and will cause damage to the fetus's cochlea.

- c. That she should play Mozart really loudly. Fetuses who listen to Mozart are more intelligent than those who do not listen to Mozart.

- d. Research has shown that fetuses love country music.

*Incorrect. Fetuses have been shown to respond best to the sound of the mother's voice.*

Answer: A

Difficulty: 3

Page: 64

Skill: A

Learning Objective: 2.10

Bloom's Taxonomy Level: Apply

52. DeCasper and Spence asked mothers to read *The Cat in the Hat* to their fetuses every day for the last six weeks of their pregnancies. After the birth, babies showed a preference for \_\_\_\_\_.

- a. hearing their mothers read any Dr. Seuss book

- b. their mother's voice

- c. rhythmic tapping

*Incorrect. The babies showed a preference for The Cat in the Hat.*

- d. hearing their mothers read *The Cat in the Hat*

*Correct. The babies preferred this even over similar rhyming stories they had not heard before.*

Answer: D

Difficulty: 1

Page: 64

Skill: C

Learning Objective: 2.10

Bloom's Taxonomy Level: Understand

53. What do fetuses do when their mothers are highly stressed?
- a. become very still  
*Incorrect. They generally move more and have faster heart rates when their mothers are stressed.*
  - b. move more and have faster heart rates  
*Correct. Fetuses respond in kind to their mothers' stress levels.*
  - c. suck their thumbs
  - d. hold their hands to their ears

Answer: B

Difficulty: 1

Page: 64

Skill: C

Learning Objective: 2.10

Bloom's Taxonomy Level: Understand

54. Your roommate is pregnant and she gets very angry and yells quite a bit over the smallest things. What is a good piece of advice that you could give her?
- a. It is OK if she gets upset, but she should not yell. It will harm the fetus's hearing.
  - b. Getting angry and yelling is good for the fetus since it will raise the fetus's heart rate.
  - c. She should probably get a different boyfriend. He is not going to be a very good father.  
*Incorrect. She should try relaxation therapy.*
  - d. That she should try relaxation therapy. Whenever she gets really upset, her fetus gets very upset, too.  
*Correct. Fetuses generally move more and have faster heart rates when their mothers are stressed.*

Answer: D

Difficulty: 1

Page: 64

Skill: A

Learning Objective: 2.10

Bloom's Taxonomy Level: Apply

55. The Beng people of the Ivory Coast have several practices and suggestions for pregnant women. Which of the following is an example of a suggestion that can be very helpful to the pregnant woman?
- a. avoid eating the meat from a bushbuck antelope
  - b. rub an oil on her belly  
*Correct. This will help her skin from feeling uncomfortably tight.*
  - c. her husband must stop hunting while she is pregnant
  - d. she must not commit any immoral behavior  
*Incorrect. They rub an oil on her belly to help her skin from feeling uncomfortable.*

Answer: B

Difficulty: 1

Page: 65

Skill: C

Learning Objective: 2.11

Bloom's Taxonomy Level: Understand



56. Which of the following is the *best* practical advice of the Beng people of the West African nation of Ivory Coast?
- a. Do not drink palm wine during the early months of pregnancy.  
*Correct. Drinking alcohol when pregnant can cause widespread damage to prenatal development.*
  - b. Rub oil on the swelling belly to relief discomfort.  
*Incorrect. This is actually encouraged, as it helps skin elasticity.*
  - c. Avoid eating meat from a bushbuck antelope.
  - d. Do not cast any curse on any enemies because your baby will become a witch.

Answer: A

Difficulty: 2

Page: 65

Skill: C

Learning Objective: 2.11

Bloom's Taxonomy Level: Understand

57. Many traditional cultures do not have access to trained physicians but may rely on which of the following individuals during the prenatal period?
- a. nurse
  - b. midwife  
*Correct. Midwives assist in prenatal care and the birth process.*
  - c. staff from the World Health Organization  
*Incorrect. Midwives are commonly used.*
  - d. paramedics

Answer: B

Difficulty: 2

Page: 66

Skill: C

Learning Objective: 2.11

Bloom's Taxonomy Level: Understand

58. Based upon the reading, a midwife might perform a(n) \_\_\_\_ if the fetus's feet are pointed towards the vaginal opening.
- a. diversion
  - b. prenatal massage  
*Incorrect. If the fetus is turned in an unfavorable position, so that it would be likely to come out feet first rather than head first, the midwife will attempt an inversion to turn the fetus's head toward the vaginal opening.*
  - c. inversion  
*Correct. If the fetus is turned in an unfavorable position, so that it would be likely to come out feet first rather than head first, the midwife will attempt an inversion to turn the fetus's head toward the vaginal opening.*
  - d. amniocentesis

Answer: C

Difficulty: 2

Page: 66

Skill: C

Learning Objective: 2.11

Bloom's Taxonomy Level: Understand

59. A method of prenatal care that has been used by traditional cultures that is now being used by midwives, nurses, and physicians in developed countries is \_\_\_\_.

a. dancing  
b. singing  
c. daily naps

*Incorrect. Prenatal massage has a long history in many cultures. In recent years, it has also begun to be used by midwives, nurses, and physicians in developed countries.*

d. massage

*Correct. Prenatal massage has a long history in many cultures. In recent years, it has also begun to be used by midwives, nurses, and physicians in developed countries.*

Answer: D

Difficulty: 1

Page: 66

Skill: C

Learning Objective: 2.11

Bloom's Taxonomy Level: Understand

% correct 97 a= 1 b= 2 c= 1 d= 97 r = .26

60. In recent years, prenatal massage in developed countries has \_\_\_\_.

a. increased  
b. decreased  
c. remained the same  
d. not been statistically tracked

Answer: A

Difficulty: 1

Page: 66

Skill: F

Learning Objective: 2.11

Bloom's Taxonomy Level: Remember

61. Recent scientific studies have shown that women should gain \_\_\_\_ pounds during pregnancy.

a. 15–20  
b. 25–35  
c. 35–40  
d. 45–50

Answer: B

Difficulty: 1

Page: 65

Skill: F

Learning Objective: 2.11

Bloom's Taxonomy Level: Remember

62. Women who gain less than 20 pounds are more likely to have babies who are \_\_\_\_.

a. more likely to be obese during childhood  
b. above average in intelligence  
c. preterm and have low birth weight  
d. more likely to have heart disease later in life

Answer: C

Difficulty: 1

Page: 65

Skill: F

Learning Objective: 2.11

Bloom's Taxonomy Level: Remember

63. Your friend is worried that she will gain quite a bit of weight since she is now pregnant. She is planning on dieting. What would be your advice?
- a. Tell her to definitely diet, this will insure that her children will not be obese.
  - b. Tell her that dieting increases intelligence in neonates.  
*Incorrect. Dieting leads to low birth weight and prematurity.*
  - c. Tell her that dieting could lead to her baby being born preterm and having a low birth weight.  
*Correct. Women should gain 25–35 pounds during pregnancy.*
  - d. That it would be a good idea to keep her weight gain under 20 pounds.

Answer: C

Difficulty: 1

Page: 65

Skill: A

Learning Objective: 2.11

Bloom's Taxonomy Level: Apply

64. What are possible side effects for the baby of a woman who gains less than 20 pounds during her pregnancy?
- a. Down syndrome and Fragile X
  - b. gestational diabetes
  - c. high blood pressure and gastrointestinal problems  
*Incorrect. Scientific studies have shown that women should typically gain 25–35 pounds during pregnancy, and women who gain less than 20 pounds are at risk for having babies who are preterm and low birth weight.*
  - d. the baby may be born preterm with a low birth weight  
*Correct. Scientific studies have shown that women should typically gain 25–35 pounds during pregnancy, and women who gain less than 20 pounds are at risk for having babies who are preterm and low birth weight.*

Answer: D

Difficulty: 2

Page: 65

Skill: C

Learning Objective: 2.11

Bloom's Taxonomy Level: Understand

65. Based upon the accumulated scientific knowledge on prenatal care, which of the following is the one key conclusion regarding pregnant women?
- a. avoid drinking any alcohol  
*Incorrect. Most professionals agree that regular prenatal care is the greatest thing a pregnant woman can do.*
  - b. minimize as much stress as possible
  - c. receive regular evaluations from a health care professional  
*Correct. The percentage of woman who receive regular prenatal care beginning early in pregnancy varies greatly based on ethnicity and SES.*
  - d. cut all caffeine from her diet

Answer: C

Difficulty: 3

Page: 65–66

Skill: C

Learning Objective: 2.11

Bloom's Taxonomy Level: Understand

66. Shantel is talking to her grandmother about how she is continuing her moderate exercise program while she is pregnant. However, Grandma warns her not to exercise because she holds the outdated belief, once common in developed countries, that Shantel is \_\_\_\_.

a. in a physical state similar to a disability or illness

*Correct. Until a few decades ago, it was widely believed in developed countries that pregnant women were too fragile to walk or carry groceries.*

b. too physically weak and could fall

c. going to harm the baby while exercising

d. going to stimulate a preterm birth

*Incorrect. Until a few decades ago, it was widely believed in developed countries that pregnancy was a kind of disability or illness.*

Answer: A

Difficulty: 2

Page: 67

Skill: A

Learning Objective: 2.12

Bloom's Taxonomy Level: Apply

67. According to the text, what enhances the health of the pregnant woman and her fetus?

a. mild to moderate exercise

*Correct. One benefit is that mild to moderate exercise increases a woman's ability to process oxygen for herself and her fetus.*

b. drinking several cups of tea each day

c. eating herbs

d. conserving energy

*Incorrect. Mild to moderate exercise enhances the health of the pregnant woman and her fetus.*

Answer: A

Difficulty: 1

Page: 67

Skill: C

Learning Objective: 2.11

Bloom's Taxonomy Level: Understand

68. What is an example of an aerobic exercise?

a. walking/jogging

*Correct. These stimulate a woman's muscular and circulatory systems.*

b. weightlifting

c. sprinting

*Incorrect. Walking/jogging are examples of aerobic exercise.*

d. jumping

Answer: A

Difficulty: 1

Page: 67

Skill: C

Learning Objective: 2.11

Bloom's Taxonomy Level: Understand

69. Why is aerobic exercise important to a pregnant woman? It helps to \_\_\_\_.

- a. lower muscle mass
- b. increase fetal heart rate
- c. stop dangerous teratogens from reaching the fetus
- d. increase the woman's ability to process oxygen

*Correct. This oxygen increase, in turn, benefits her fetus.*

Answer: D

Difficulty: 1

Page: 67

Skill: C

Learning Objective: 2.11

Bloom's Taxonomy Level: Understand

70. Your best friend has just learned that she is pregnant. She is a healthy person and is planning on engaging in aerobic exercise during her pregnancy. What would be your advice to her? She should \_\_\_\_.

- a. be very careful in that this type of exercise during pregnancy could lower muscle mass

*Incorrect. Aerobic exercise increases a pregnant woman's ability to process oxygen, a benefit for both her and the fetus.*

- b. not run too quickly because it could dangerously increase fetal heart rate
- c. exercise regularly since it will stop dangerous teratogens from reaching the fetus
- d. exercise regularly in that she will increase her ability to process oxygen

*Correct. Moderate aerobic exercise increases a pregnant woman's ability to process oxygen, a benefit for both her and the fetus.*

Answer: D

Difficulty: 1

Page: 67

Skill: A

Learning Objective: 2.11

Bloom's Taxonomy Level: Apply

71. According to the text, what type of exercise stimulates the circulatory and muscular systems of the woman's body and increases her ability to process oxygen?

- a. meditation
- b. active stretching
- c. weight training

*Incorrect. Aerobic exercise stimulates the circulatory and muscular systems.*

- d. aerobic exercise

*Correct. Moderate aerobic exercise provides benefit for both a pregnant woman and her fetus.*

Answer: D

Difficulty: 1

Page: 67

Skill: C

Learning Objective: 2.11

Bloom's Taxonomy Level: Understand

72. What exercise strengthens the vaginal muscles and helps prepare the mother for the delivery of the fetus?
- a. bench presses
  - b. squats
  - c. Kegels
  - d. abdominal crunches

Answer: C

Difficulty: 1

Page: 67

Skill: F

Learning Objective: 2.12

Bloom's Taxonomy Level: Remember

73. How are Kegel exercises performed? By tensing the \_\_\_\_.
- a. muscles of the vagina and anus repeatedly for 10-second intervals  
*Correct. This strengthens the vaginal muscles in preparation for delivery of the fetus.*
  - b. abdominal muscles repeatedly for 15-second intervals  
*Incorrect. Kegel exercises are performed by tensing the muscles of the vagina and anus.*
  - c. quadriceps and hamstrings repeatedly for 10-second intervals
  - d. muscles of the lower back repeatedly for 10-second intervals

Answer: A

Difficulty: 1

Page: 67

Skill: C

Learning Objective: 2.11

Bloom's Taxonomy Level: Understand

74. Your aunt is pregnant for the first time. She has heard that Kegel exercises are a good idea, but does not know how to perform them. You would tell her to tense the \_\_\_\_.
- a. muscles of the vagina and anus repeatedly for 10-second intervals  
*Correct. This strengthens the vaginal muscles in preparation for delivery of the fetus.*
  - b. abdominal muscles repeatedly for 15-second intervals  
*Incorrect. Kegel exercises involve tensing the muscles of the vagina and anus repeatedly for 10-second intervals.*
  - c. quadriceps and hamstrings repeatedly for 10-second intervals
  - d. muscles of the lower back repeatedly for 10-second intervals

Answer: A

Difficulty: 1

Page: 67

Skill: A

Learning Objective: 2.11

Bloom's Taxonomy Level: Apply

75. Which of the following exercises should be avoided during pregnancy?
- a. any contact sports  
*Correct. Contact sports are too traumatic for pregnant women.*
  - b. walking
  - c. light jogging  
*Incorrect. Light jogging is recommended for pregnant women.*
  - d. swimming

Answer: A

Difficulty: 1

Page: 67

Skill: C

Learning Objective: 2.11

Bloom's Taxonomy Level: Understand

76. The guidelines for prenatal care focus mostly on three key areas: \_\_\_\_.
- a. rest, stress reduction, and the avoidance of fatty foods
  - b. diet, exercise, and avoidance of teratogens
  - c. exercise, mental state, and relaxation
  - d. prenatal vitamins, exercise, and avoidance of caffeine

Answer: B

Difficulty: 2

Page: 67

Skill: F

Learning Objective: 2.11

Bloom's Taxonomy Level: Remember

77. Iron-rich foods such as beef, duck, potatoes, spinach, and dried fruits are important in what way for the pregnant mother and fetus? These foods help to \_\_\_\_.
- a. build the blood supply of the mother and fetus  
*Correct. Iron deficiencies place women at risk of delivering preterm or low-birth-weight babies.*
  - b. increase the muscle mass of the fetus
  - c. assist in visual development of the fetus  
*Incorrect. Iron-rich foods help to build the blood supply of the mother and fetus.*
  - d. provide nutrients for proper brain development

Answer: A

Difficulty: 1

Page: 69

Skill: C

Learning Objective: 2.12

Bloom's Taxonomy Level: Understand

78. Low iodine intake during pregnancy increases the risks of miscarriage, stillbirth, and abnormalities in fetal brain development. As a result, what has been done since the 1920s in developed countries?
- a. women receive iodine injections  
*Incorrect. Salt has been iodized.*
  - b. salt has been iodized  
*Correct. Iodine deficiencies are still a risk in developing countries.*
  - c. babies are given iodine baths after birth
  - d. fetuses are examined with ultrasound

Answer: B

Difficulty: 1

Page: 69

Skill: C

Learning Objective: 2.12

Bloom's Taxonomy Level: Understand

79. As compared with developing nations, the rates of miscarriage, stillbirth, and abnormalities in fetal brain development have been lowered because iodine has been added to \_\_\_\_.
- a. salt
  - b. school lunches
  - c. bread
  - d. the water supply

Answer: A

Difficulty: 2

Page: 69

Skill: F

Learning Objective: 2.12

Bloom's Taxonomy Level: Remember

80. \_\_\_\_ is/are described as behaviors, environments, and bodily conditions that could be harmful to a fetus.
- a. Lanugo
  - b. Teratogens
  - c. Vernix
  - d. Trophoblasts

Answer: B

Difficulty: 1

Page: 68

Skill: F

Learning Objective: 2.12

Bloom's Taxonomy Level: Remember

81. Which period of prenatal development is considered the *critical period* and also a time in which teratogens can have a profound effect that endure into adulthood?
- a. conception
  - b. germinal period
  - c. embryonic period
  - d. fetal period
- Incorrect. The placenta is not fully formed during the embryonic period.*
- Correct. The embryonic period lasts from the third to the eighth week after conception.*

Answer: C

Difficulty: 1

Page: 68

Skill: C

Learning Objective: 2.12

Bloom's Taxonomy Level: Understand

% correct 53 a= 0 b= 6 c= 53 d= 41 r = .52

82. What term refers to malnutrition, disease, alcohol, tobacco, and other drugs that are harmful to the fetus?
- a. teratogens
  - b. pathogens
  - c. carcinogens
  - d. fetogens

Answer: A

Difficulty: 1



Page: 68

Skill: F

Learning Objective: 2.12

Bloom's Taxonomy Level: Remember

% correct 89 a= 89 b= 8 c= 2 d= 1 r= .38

83. Which of the following are examples of teratogens?
- a. calcium, iron, and iodine
  - b. prenatal vitamins and micronutrients
  - c. meats, grains, and legumes
  - d. alcohol, tobacco, and other drugs

Answer: D

Difficulty: 2

Page: 68

Skill: F

Learning Objective: 2.12

Bloom's Taxonomy Level: Remember

84. Which of the following are examples of teratogens?
- a. calcium, iron, and iodine
  - b. prenatal vitamins and micronutrients
  - c. infectious diseases and malnutrition
  - d. folic acid and iodine

Answer: C

Difficulty: 2

Page: 68

Skill: F

Learning Objective: 2.12

Bloom's Taxonomy Level: Remember

85. What describes the profound and enduring effect on later development that teratogens can have during the embryonic period?
- a. critical period  
*Correct. The embryonic period lasts from the third to the eighth week after conception.*
  - b. sensitive period  
*Incorrect. The profound and enduring effect on later development that teratogens can have during the embryonic period describes a critical period.*
  - c. embryonic period
  - d. fetal period

Answer: A

Difficulty: 2

Page: 68

Skill: C

Learning Objective: 2.12

Bloom's Taxonomy Level: Understand

86. If a pregnant woman contracts rubella during the embryonic period of pregnancy, what are the likely outcomes for the baby?
- a. blindness, deafness, intellectual disabilities and abnormalities of the heart, genitals and digestive system

- b. neural tube defect
- c. mental retardation
- d. lack of iron in the blood supply

Answer: A

Difficulty: 2

Page: 69

Skill: F

Learning Objective: 2.12

Bloom's Taxonomy Level: Remember

87. What are the major teratogens during the fetal period?
- a. lack of maternal sleep and lack of exercise
  - b. excessive maternal weight gain and maternal age
  - c. malnutrition and tobacco
- Correct. Malnutrition and tobacco use are the major teratogens during the fetal period.*
- d. sugar and starch
- Incorrect. The major teratogens during the fetal period are malnutrition and tobacco.*

Answer: C

Difficulty: 2

Page: 68, 70

Skill: C

Learning Objective: 2.12

Bloom's Taxonomy Level: Understand

88. According to the text, what is the most common teratogen worldwide?
- a. malnutrition
  - b. tobacco
  - c. alcohol
  - d. infectious disease

Answer: A

Difficulty: 1

Page: 68

Skill: F

Learning Objective: 2.12

Bloom's Taxonomy Level: Remember

89. From a global perspective, which of the following is the most common teratogen to affect pregnancies?
- a. lead
  - b. malnutrition
  - c. alcohol
  - d. rubella

Answer: B

Difficulty: 2

Page: 68

Skill: F

Learning Objective: 2.12

Bloom's Taxonomy Level: Remember

90. Prenatal health depends on proper prenatal nutrition. Because approximately 50% of the world's population is rural, pregnant women \_\_\_\_\_.

- a. have access to fruits and vegetables year round
- b. are malnourished year round

*Incorrect. Pregnant women who live in rural areas may only eat well during the summer and fall when the crops have been harvested.*

- c. cannot afford the required vitamins recommended by their physicians
- d. may only eat well only during the summer and fall

*Correct. The diet of people in rural areas can vary dramatically depending on the season.*

Answer: D

Difficulty: 2

Page: 68

Skill: C

Learning Objective: 2.12

Bloom's Taxonomy Level: Understand

91. What is another name for the German measles?

- a. cephalopelvic disproportion
- b. rubella

*Correct. The embryonic period is a critical period for exposure to rubella.*

- c. anencephaly
- d. neurofibromatosis

*Incorrect. German measles is also known as rubella.*

Answer: B

Difficulty: 2

Page: 69

Skill: C

Learning Objective: 2.12

Bloom's Taxonomy Level: Understand

92. Infants born with the effects of rubella (German measles) within the United States have greatly decreased since the 1960s because \_\_\_\_.

- a. vaccinations for infectious diseases have increased
- b. funding for Medicaid and Medicare have increased
- c. fluoride has been added to the water
- d. folic acid has been added to grain products

Answer: A

Difficulty: 3

Page: 69

Skill: F

Learning Objective: 2.12

Bloom's Taxonomy Level: Remember

93. What sexually transmitted infection is caused by the human immunodeficiency virus?

- a. syphilis
- b. herpes
- c. gonorrhea
- d. AIDS

Answer: D

Difficulty: 1

Page: 69–70

Skill: F

Learning Objective: 2.12

Bloom's Taxonomy Level: Remember

94. What sexually transmitted infection can be transmitted to the fetus during prenatal development and to the neonate during birth and later through breast milk?
- syphilis
  - herpes
- Incorrect. AIDS can be transmitted from mother to child during prenatal development through the blood, during birth, or through breast milk.*
- gonorrhea
  - AIDS
- Correct. HIV/AIDS damages brain development prenatally and increases the risk that an infant will not live to adulthood.*

Answer: D

Difficulty: 2

Page: 69–70

Skill: C

Learning Objective: 2.12

Bloom's Taxonomy Level: Understand

95. HIV/AIDS can be transmitted from the mother to the child \_\_\_\_.
- during prenatal development, birth, or through breast milk
- Correct. HIV/AIDS damages brain development prenatally and increases the risk that an infant will not live to adulthood.*
- through casual skin-to-skin contact such as hugs and kisses
- Incorrect. HIV/AIDS can be transmitted from mother to child during prenatal development through the blood, during birth, or through breast milk.*
- via bacterial infections during times of illness while pregnant
  - through HIV bacteria being transmitted via contaminated environmental objects

Answer: A

Difficulty: 3

Page: 69–70

Skill: C

Learning Objective: 2.12

Bloom's Taxonomy Level: Understand

% correct 94 a= 94 b= 0 c= 6 d= 0 r = .18

96. Where do 95% of all HIV infections take place?
- North America
  - Asia
  - Africa
  - Europe

Answer: C

Difficulty: 1

Page: 70

Skill: F

Learning Objective: 2.12

Bloom's Taxonomy Level: Remember

97. What teratogen causes the most widespread damage to prenatal development in developed countries?

- a. tobacco

*Incorrect. Alcohol causes more damage to prenatal development in developed countries.*

- b. infectious diseases

- c. cocaine

- d. alcohol

*Correct. Alcohol causes more damage to prenatal development in developed countries.*

Answer: D

Difficulty: 1

Page: 70

Skill: C

Learning Objective: 2.12

Bloom's Taxonomy Level: Understand

98. According to the text, which of the following is a safe amount of alcohol an individual can consume during pregnancy?

- a. 1 glass of wine per week

- b. 1 glass of wine per week only after the second trimester

- c. 1 glass of wine per week only after the third trimester

*Incorrect. A pregnant woman should not drink at all during her pregnancy.*

- d. none at all

*Correct. Research has shown that the only safe level of alcohol during pregnancy is none at all.*

Answer: D

Difficulty: 1

Page: 70

Skill: C

Learning Objective: 2.12

Bloom's Taxonomy Level: Understand

99. What condition might occur in the fetus, and later in the child, if the pregnant mother consumes alcohol during her pregnancy?

- a. fibromyalgia

- b. alcoholism

*Incorrect. Fetal alcohol spectrum disorder can result if a pregnant woman drinks alcohol during her pregnancy.*

- c. neuromuscular disorder

- d. fetal alcohol spectrum disorder

*Correct. This disorder can result in facial deformities, heart problems, and cognitive problems.*

Answer: D

Difficulty: 1

Page: 70

Skill: C

Learning Objective: 2.12

Bloom's Taxonomy Level: Understand

100. An infant born with facial deformities, heart problems, misshapen limbs, and a variety of cognitive problems, such as mental retardation, has characteristics of which of the following?

- a. fetal alcohol spectrum disorder

*Correct. These conditions are characteristics of fetal alcohol spectrum disorder.*

- b. autism
- c. Prader-Willi syndrome
- d. rubella

*Incorrect. These conditions are characteristics of fetal alcohol spectrum disorder.*

Answer: A

Difficulty: 2

Page: 70

Skill: C

Learning Objective: 2.12

Bloom's Taxonomy Level: Understand

101. What is the leading cause of low birth weight in developed countries?
- a. smoking
  - b. cocaine use
  - c. drinking alcohol
  - d. mega-dosing of vitamins

Answer: A

Difficulty: 1

Page: 70

Skill: F

Learning Objective: 2.12

Bloom's Taxonomy Level: Remember

102. What maternal behavior during pregnancy was related to conduct disorders and substance abuse in adolescence?
- a. mega-dosing of vitamins
  - b. drinking alcohol
  - c. cocaine use
  - d. smoking

Answer: D

Difficulty: 1

Page: 70

Skill: F

Learning Objective: 2.12

Bloom's Taxonomy Level: Remember

103. You notice that your pregnant friend just lit a cigarette and you ask her, "What the heck are you doing?" Your friend replies that her doctor said that it was okay to smoke during pregnancy. Which of the following statements should be your reply?
- a. "There are known side effects to smoking and no responsible physician would tell you that you can smoke if you are pregnant."
- Correct. Maternal smoking is the leading cause of low birth weight in developed countries.*
- b. "Okay, research has shown that smoking is harmless."
  - c. "Most physicians would recommend that you wait until the third trimester to begin smoking again."
- Incorrect. Pregnant women should not smoke at any time during their pregnancy.*
- d. "That makes sense; smoking is harmful if it is secondhand smoke."

Answer: A

Difficulty: 2

Page: 70

Skill: A

Learning Objective: 2.12

Bloom's Taxonomy Level: Apply

104. What paternal behavior during pregnancy leads to higher risks of low birth weight and childhood cancer?
- a. mega-dosing of vitamins
  - b. drinking alcohol
  - c. smoking
  - d. cocaine use

Answer: C

Difficulty: 1

Page: 70

Skill: F

Learning Objective: 2.12

Bloom's Taxonomy Level: Remember

## Short Answer Questions

105. In what prenatal period are the lanugo and vernix formed? Explain what they are.

**Answer: Both are formed during the fetal period. The vernix is the waxy coating that protects the skin while floating in the amniotic fluid; the lanugo is the fine hair that helps the vernix to stick to the skin.**

Page: 63

Learning Objective: 2.10

Bloom's Taxonomy Level: Remember

106. Give an example of pregnancy advice that reflects cultural wisdom in traditional cultures.

What is a plausible explanation that this advice is passed down from generation to generation?

**Answer: Among the Beng people of West Africa, women are warned against drinking palm wine during pregnancy and also to avoid eating the meat of the bushback antelope (or the baby may be born with stripes). These warnings reflect the fact that people in these cultures know that many things can go wrong during pregnancy and these tips may offer a sense of control.**

Page: 65

Learning Objective: 2.11

Bloom's Taxonomy Level: Apply

107. Who usually performs prenatal massages in traditional cultures? Are there benefits to prenatal massage besides making the mother feel good and more relaxed? Explain.

**Answer: It is usually performed by a midwife. Benefits to mother include less back pain, less swelling of joints, better sleep, and a better chance that the fetus will come out head first. Neonates score better on physical and social measures.**

Page: 66

Learning Objective: 2.11

Bloom's Taxonomy Level: Understand

108. Recall the World Health Organization's guidelines for prenatal care. Name one nutrient that is of critical importance during pregnancy, where women would get it, and what the consequences would be of not having it.

**Answer: Iodine. In developed countries, iodine is added to salt. Without it, there is increased risk of miscarriage, stillbirth, or abnormal brain development. Iodine is more readily available in developed countries.**

Page: 69

Learning Objective: 2.12

Bloom's Taxonomy Level: Understand

109. How much weight should a woman gain during pregnancy (provide an approximate range)? Provide one diet or exercise recommendation.

**Answer: Women should gain between 25–35 pounds. They should drink more fluids and they should eat plenty of fruits and vegetables, especially iron-rich foods, such as leafy greens.**

Page: 65

Learning Objective: 2.11

Bloom's Taxonomy Level: Understand



## Essay Questions

110. Choose one prenatal period and provide a detailed overview of what happens. Include when it occurs.

**Answer: The germinal period (0–2 weeks after conception) includes the formation of the zygote, rapid cell division forming a 100-celled blastocyst, and implantation. The outer layer of the blastocyst, the trophoblast, develops into the structures that will house and nourish the embryo (amnion, placental, umbilical cord). The inner layer becomes the embryonic disk that eventually forms the embryo.**

Pages: 61–62

Learning Objective: 2.8

Bloom's Taxonomy Level: Understanding

111. What does viability mean, and how likely is a fetus to be viable at 22 weeks? At 26 weeks? Why would this vary depending upon whether a person lives in a developed or a developing country? What is the main obstacle to viability even by the beginning of the third trimester?

**Answer: This is when a fetus would be able to survive outside the womb. Survival is unlikely before 22 weeks, even with medical intervention. Even if babies do survive when they are premature, they are at greater risk for birth defects and disabilities compared to full-term babies. In developing countries, there is less access to medical supplies and facilities, so the age of viability is later than in developed countries (some time in the third trimester, depending on the country and its technology). The reason babies are so vulnerable even in the third trimester is their immature lungs.**

Page: 63–64

Learning Objective: 2.10

Bloom's Taxonomy Level: Apply

# TOTAL ASSESSMENT GUIDE

## Chapter 2-Section 3

### Genetics and Prenatal Development

Learning Objective		Remember	Understand	Apply
<b>Learning Objective 2.13</b>	Multiple Choice	1, 2, 3, 5, 8, 10, 11, 14, 15, 16	6, 7, 9, 12, 13, 17	4
	Short Answer	57		
	Essay			
<b>Learning Objective 2.14</b>	Multiple Choice	20, 22, 23, 24, 28, 29, 31	18, 19, 21, 25, 30, 32	26, 27
	Short Answer	58, 59, 60	61	
	Essay		62	63
<b>Learning Objective 2.15</b>	Multiple Choice	34, 35, 36, 37, 38, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 52, 53, 54	33, 39, 40, 55	51
	Short Answer			
	Essay			
<b>Learning Objective 2.16</b>	Multiple Choice	56		
	Short Answer			
	Essay			

## Section 3 Pregnancy Problems

### Test Item File

#### Multiple Choice Questions

1. During meiosis, at times chromosomes sometimes fail to divide properly, and as a result, the person may have 45 or 47 chromosomes. Which of the following best describes this phenomenon?
- chromosomal disorders
  - genetic misprinting
  - mitosis error
  - gene displacement

Answer: A

Difficulty: 1

Page: 72

Skill: F

Learning Objective: 2.13

Bloom's Taxonomy Level: Remember

2. It is estimated that half of all conceptions have too many or too few chromosomes. According to the text, what happens to most of the zygotes that are formed in these situations?
- They are spontaneously aborted.
  - They result in neonates with birth defects.
  - They result in twins.
  - They have no problems.

Answer: A

Difficulty: 1

Page: 72

Skill: F

Learning Objective: 2.13

Bloom's Taxonomy Level: Remember

% correct 41 a= 41 b= 53 c= 0 d= 6 r = .43

3. Approximately how many neonates have a chromosomal disorder?
- 1 in 10
  - 1 in 200
  - 1 in 500
  - 1 in 1,000

Answer: B

Difficulty: 1

Page: 72

Skill: F

Learning Objective: 2.13

Bloom's Taxonomy Level: Remember

4. Your friend just found out that she is pregnant after trying for six months. But she is paranoid that she is going to have a baby with a chromosomal disorder. You try to

reassure her by telling her that the rate of babies born with chromosomal disorders is

- \_\_\_\_\_.  
a. 1 in 10  
b. 1 in 200

*Correct. There are two main types of chromosomal disorders: ones that involve sex chromosomes and ones that take place on the twenty-first pair of chromosomes.*

- c. 1 in 500  
*Incorrect. Approximately 1 in 200 neonates have a chromosomal disorder.*  
d. 1 in 1,000

Answer: B

Difficulty: 1

Page: 72

Skill: A

Learning Objective: 2.13

Bloom's Taxonomy Level: Apply

5. Approximately how many neonates have some type of sex chromosome disorder?  
a. 1 in 10  
b. 1 in 200  
c. 1 in 500  
d. 1 in 1,000

Answer: C

Difficulty: 1

Page: 72

Skill: F

Learning Objective: 2.13

Bloom's Taxonomy Level: Remember

6. What are two common consequences of sex chromosome disorders?  
a. shortened stature and the likelihood to develop nonorganic failure to thrive  
b. an increased likelihood to have a pregnancy that is preterm and an infant with low birth weight  
c. an infant that is more likely to have a difficult temperament and an insecure attachment  
*Incorrect. Cognitive deficits tend to be a side effect of various sex-linked disorders.*  
d. cognitive deficits and abnormal development of the reproductive system at puberty

*Correct. Mental retardation, learning disabilities, and speech impairments are all common.*

Answer: D

Difficulty: 2

Page: 72

Skill: C

Learning Objective: 2.13

Bloom's Taxonomy Level: Understand

% correct 94 a= 0 b= 6 c= 0 d= 94 r = .70

7. One of the consequences of having a sex chromosomal disorder is that it might disrupt development of the reproductive system at puberty. What can be done about the difficulty at puberty?  
a. role playing therapy

*Incorrect. The type of treatment would be hormone replacement therapy.*

- b. hormone replacement treatment

*Correct. This can often effectively correct the problems caused by a sex chromosomal disorder.*

- c. group therapy
- d. strenuous exercise

Answer: B

Difficulty: 2

Page: 72–73

Skill: C

Learning Objective: 2.13

Bloom's Taxonomy Level: Understand

8. An individual with Down syndrome has how many chromosomes?

- a. 45
- b. 46
- c. 47
- d. 48

Answer: C

Difficulty: 1

Page: 73

Skill: F

Learning Objective: 2.13

Bloom's Taxonomy Level: Remember

9. Down syndrome is also known as trisomy-21 because individuals with Down syndrome

\_\_\_\_\_.

- a. have three distinct facial features by the 21st week of pregnancy
- b. show three distinct temperament patterns by the 21st week of infancy
- c. have a third chromosome on the 21st pair

*Correct. Individuals with Down syndrome have an extra chromosome on the 21st pair.*

- d. have 21 genes on the 3rd pair of chromosomes

*Incorrect. Individuals with Down syndrome have an extra chromosome on the 21st pair.*

Answer: C

Difficulty: 3

Page: 73

Skill: C

Learning Objective: 2.13

Bloom's Taxonomy Level: Understand

10. What is another name for trisomy-21?

- a. non-sex-linked-21
- b. intellectual disability
- c. Edward's syndrome
- d. Down syndrome

Answer: D

Difficulty: 1

Page: 73

Skill: F

Learning Objective: 2.13

Bloom's Taxonomy Level: Remember

11. What disorder includes the following characteristics: short, stocky build; flat face; a large tongue; extra fold of skin on the eyelids; and possible cognitive deficits, hearing impairments, and heart defects?
- a. non-sex-linked-21
  - b. Down syndrome
  - c. Edward's syndrome
  - d. intellectual disability

Answer: B

Difficulty: 2

Page: 73

Skill: F

Learning Objective: 2.13

Bloom's Taxonomy Level: Remember

12. What helps children with trisomy-21 develop more favorably?

- a. hormone replacement therapy
- b. weekly motor treatments

*Incorrect. Children with trisomy-21 need supportive and encouraging parents.*

- c. a heart transplant
- d. supportive and encouraging parents

*Correct. Intervention programs in infancy and childhood have also been shown to have positive effects.*

Answer: D

Difficulty: 2

Page: 72

Skill: C

Learning Objective: 2.13

Bloom's Taxonomy Level: Understand

13. Adult individuals with trisomy-21 are \_\_\_\_.

- a. often able to hold a job that is highly structured with simple tasks

*Correct. With adequate social support, an adult with Down syndrome can often successfully hold a job.*

- b. most likely institutionalized

*Incorrect. Adults with trisomy-21 can hold jobs that are highly structured with simple tasks.*

- c. not likely to make it to age 30
- d. as likely as individuals who do not have trisomy-21 to enter college

Answer: A

Difficulty: 2

Page: 73

Skill: C

Learning Objective: 2.13

Bloom's Taxonomy Level: Understand

14. Individuals who have what chromosomal disorder are more likely to develop leukemia, cancer, Alzheimer's disease, or heart disease at earlier ages than usual (in their thirties and forties)?

- a. non-sex-linked-21
- b. Down syndrome
- c. Edward's syndrome

- d. intellectual disability

Answer: B

Difficulty: 2

Page: 73

Skill: F

Learning Objective: 2.13

Bloom's Taxonomy Level: Remember

15. Children born with chromosomal problems are almost always born to parents with \_\_\_\_.
- a. the very same chromosomal problem
  - b. similar genetic disorders
  - c. above average intelligence
  - d. no genetic or chromosomal problems

Answer: D

Difficulty: 2

Page: 73

Skill: F

Learning Objective: 2.13

Bloom's Taxonomy Level: Remember

16. Which of the following increases the risk of having a child with Down syndrome?
- a. smoking while pregnant
  - b. alcohol consumption
  - c. maternal age
  - d. paternal stress

Answer: C

Difficulty: 2

Page: 73

Skill: F

Learning Objective: 2.13

Bloom's Taxonomy Level: Remember

% correct 76 a= 0 b= 24 c= 76 d= 0 r = .49

17. How old are the ova of a 42 year-old woman trying to conceive?

- a. 2 weeks
- b. 2 months

*Incorrect. A 42-year-old woman's ova are 42 years old.*

- c. 2 years
- d. 42 years

*Correct. As we learned earlier in the chapter, a female produces all the ova she will ever have while she is still in the womb.*

Answer: D

Difficulty: 2

Page: 73

Skill: C

Learning Objective: 2.13

Bloom's Taxonomy Level: Understand

18. Which of the following are three techniques used to monitor pregnancy?

- a. fetal heart rate, blood pressure, and CT scans
- b. ultrasounds, amniocentesis, and chorionic villus sampling

*Correct. All three of these methods are commonly available in developed countries.*

- c. genetic counseling, amniocentesis, and epidurals
- Incorrect. Genetic counseling is not used to monitor pregnancy.*
- d. fMRI, CT, and PET scans

Answer: B

Difficulty: 2

Page: 74

Skill: C

Learning Objective: 2.14

Bloom's Taxonomy Level: Understand

19. What prenatal technique uses high-frequency waves to examine the characteristics of the fetus in-utero?

- a. amniocentesis

*Incorrect. Ultrasound uses high-frequency sound waves to examine the fetus in-utero.*

- b. chorionic villus sampling
- c. alphafetal protein
- d. ultrasound

*Correct. Today, ultrasound is used for most pregnancies in developed countries.*

Answer: D

Difficulty: 1

Page: 74

Skill: C

Learning Objective: 2.14

Bloom's Taxonomy Level: Understand

20. \_\_\_\_ uses high-frequency sound waves that are directed toward the uterus, and as they bounce off the fetus, they are converted by a computer to an image that can be viewed on a screen.

- a. Genetic counseling
- b. Ultrasound
- c. Chorionic villus sampling
- d. Amniocentesis

Answer: B

Difficulty: 1

Page: 74

Skill: F

Learning Objective: 2.14

Bloom's Taxonomy Level: Remember

21. Which of the following is the cheapest, easiest, and safest way for physicians to monitor fetal development?

- a. genetic counseling

*Incorrect. Ultrasounds that can be used during routine appointments are relatively inexpensive.*

- b. amniocentesis
- c. ultrasound

*Correct. Today ultrasound is used for most pregnancies in developed countries.*

- d. chorionic villus sampling



Answer: C

Difficulty: 1

Page: 74

Skill: C

Learning Objective: 2.14

Bloom's Taxonomy Level: Understand

22. What prenatal technique uses a long, hollow needle to extract amniotic fluid to examine the fetus's genotype?
- amniocentesis
  - chorionic villus sampling
  - alphafetal protein
  - ultrasound

Answer: A

Difficulty: 1

Page: 74

Skill: F

Learning Objective: 2.14

Bloom's Taxonomy Level: Remember

23. What prenatal technique can be used to examine the status of the fetus by taking samples of the cells that are beginning to form the umbilical cord?
- amniocentesis
  - chorionic villus sampling
  - alphafetal protein
  - ultrasound

Answer: B

Difficulty: 1

Page: 74

Skill: F

Learning Objective: 2.14

Bloom's Taxonomy Level: Remember

24. Which of the following techniques is used sparingly because there is a slight but genuine risk of miscarriage or damage to the fetus; however, it has a 99% accuracy in diagnosing genetic problems?
- CT scan
  - ultrasound
  - amniocentesis
  - chorionic villus sampling

Answer: D

Difficulty: 2

Page: 74

Skill: F

Learning Objective: 2.14

Bloom's Taxonomy Level: Remember

25. Why would some couples seek genetic counseling before attempting a pregnancy?
- They believe that they might be carriers for a genetic disorder.
- Correct. Genetic counseling involves analyzing the family history and genotype of prospective parents.*

- b. They live in a high-risk area.
- c. They want to have a high-IQ baby.
- d. They want a particular characteristic in their offspring.

*Incorrect. Couples who believe that they might be carriers for genetic disorders might consider genetic counseling.*

Answer: A

Difficulty: 1

Page: 74–75

Skill: C

Learning Objective: 2.14

Bloom's Taxonomy Level: Understand

26. Latasha and Brett are having their first child and are concerned that their child may have Down syndrome because Latasha is over 40 years old. Which of the following would most likely be used to help Latasha and Brett through this process?

- a. an amniocentesis and PET scan
- b. an ultrasound and genetic counseling
- c. an amniocentesis and ultrasound
- d. a chorionic villus sampling and fMRI

*Correct. Those who are at risk for Down syndrome would use an ultrasound because it the safest approach.*

*Incorrect. Those who are at risk for Down syndrome would use an ultrasound because it the safest approach.*

Answer: B

Difficulty: 3

Page: 74–75

Skill: A

Learning Objective: 2.14

Bloom's Taxonomy Level: Apply

27. Genetic counseling would be appropriate for which of the following couples?

- a. JJ and Jennifer, who are in their early 30s and have just completed an unsuccessful round of artificial insemination

*Incorrect. People with risks that merit genetic counseling include those who have an inherited genetic condition or a close relative who has one, couples with a history of miscarriages or infertility, and older couples.*

- b. Stephen and Kerry, who are in their early 20s and have been trying to become pregnant but have been unsuccessful for the last two months
- c. Merriam and Samir, who are in their early 40s and have a history of miscarriages and infertility

*Correct. People with risks that merit genetic counseling include those who have an inherited genetic condition or a close relative who has one, couples with a history of miscarriages or infertility, and older couples.*

- d. Ngyuen and Pham, who are in their early 30s and both have a history of diabetes

Answer: C

Difficulty: 2

Page: 74–75

Skill: A

Learning Objective: 2.14

Bloom's Taxonomy Level: Apply

28. What is the condition when infants are born with parts of their brain missing?
- a. spina bifida
  - b. anencephaly
  - c. microcephaly
  - d. exocephaly

Answer: B

Difficulty: 2

Page: 68

Skill: F

Learning Objective: 2.14

Bloom's Taxonomy Level: Remember

29. What is the condition in which the neonate is born with an extreme distortion in the shape of the spinal column?
- a. spina bifida
  - b. anencephaly
  - c. microencephaly
  - d. exocephaly

Answer: A

Difficulty: 2

Page: 68

Skill: F

Learning Objective: 2.14

Bloom's Taxonomy Level: Remember

30. During pregnancy, deficiencies in folic acid may result in \_\_\_\_.
- a. low birth weight and premature delivery  
*Incorrect. Pregnancies result in a higher rate of spina bifida due to a lack of folic acid.*
  - b. anencephaly and spina bifida  
*Correct. Folic acid is the key to preventing these conditions.*
  - c. Down syndrome and Turner syndrome
  - d. HIV and malaria

Answer: B

Difficulty: 3

Page: 68

Skill: C

Learning Objective: 2.14

Bloom's Taxonomy Level: Understand

31. What dietary substance has been found to reduce spina bifida and anencephaly?
- a. pectin
  - b. vitamin D
  - c. iodine
  - d. folic acid

Answer: D

Difficulty: 1

Page: 68

Skill: F

Learning Objective: 2.14

Bloom's Taxonomy Level: Remember

32. Many countries have a lower rate of pregnancies resulting in spina bifida because \_\_\_\_.
- a. iodine is added to table salt
  - b. fluoride is added to drinking water
  - c. folic acid is added to grain products
  - d. school immunizations are required
- Incorrect. Many countries passed laws requiring folic acid to be added to grain products such as cereals, bread, pasta, flour, and rice.*
- Correct. Many countries passed laws requiring folic acid to be added to grain products such as cereals, bread, pasta, flour, and rice.*

Answer: C

Difficulty: 3

Page: 69

Skill: C

Learning Objective: 2.14

Bloom's Taxonomy Level: Understand

33. How is infertility defined?
- a. the presence of endometriosis
  - b. when the male has a low sperm count
  - c. inability to conceive after trying for a year
  - d. no desire to have children
- Incorrect. Infertility is defined as the inability to conceive after trying for a year.*
- Correct. Most women of reproductive age will become pregnant within a year or two of trying to conceive.*

Answer: C

Difficulty: 1

Page: 75

Skill: C

Learning Objective: 2.15

Bloom's Taxonomy Level: Understand

34. According to the text, infertility rates have remained constant over the past century at the rate of \_\_\_\_.
- a. 1–5%
  - b. 10–15%
  - c. 20–25%
  - d. 30–35%

Answer: B

Difficulty: 1

Page: 75

Skill: F

Learning Objective: 2.15

Bloom's Taxonomy Level: Remember

35. Over the past century, the rate of infertility in the United States has \_\_\_\_.
- a. remained the same at 35%
  - b. declined to 5%
  - c. remained the same at 10–15%
  - d. declined to 10–25%

Answer: C

Difficulty: 3

Page: 75

Skill: F

Learning Objective: 2.15

Bloom's Taxonomy Level: Remember

36. What percent of infertility problems are related to the male?
- a. 10%
  - b. 30%
  - c. 50%
  - d. 70%

Answer: C

Difficulty: 1

Page: 75

Skill: F

Learning Objective: 2.15

Bloom's Taxonomy Level: Remember

37. It is a misconception that females are primarily responsible for infertility, because \_\_\_\_% of the time it is the male who is the source of a couple's infertility.
- a. 40
  - b. 50
  - c. 60
  - d. 70

Answer: B

Difficulty: 2

Page: 75

Skill: F

Learning Objective: 2.15

Bloom's Taxonomy Level: Remember

38. Which of the following are three main sources for male infertility?
- a. erectile difficulties, decreased libido, and low sperm count
  - b. sperm death, poor sperm mobility, and low seminal fluid
  - c. low sperm production, poor sperm quality, and poor sperm movement
  - d. low sperm production, increased libido, and poor sperm movement

Answer: B

Difficulty: 2

Page: 75–76

Skill: F

Learning Objective: 2.15

Bloom's Taxonomy Level: Remember

39. It takes approximately three times longer for men over the age of 40 to impregnate a partner than it does for men under age 25. Why?
- a. lack of libido
- Incorrect. It takes longer because of the decrease in the quantity and quality of their sperm.*
- b. endometriosis
  - c. decrease in the quantity and quality of their sperm
- Correct. Men's sperm count decreases with age.*
- d. their partner's fertility

Answer: C

Difficulty: 1

Page: 76

Skill: C

Learning Objective: 2.15

Bloom's Taxonomy Level: Understand

40. Rashid and Varsha are seeking fertility treatment and were informed by their physician that Rashid's sperm count is low and the quality is poor. Which of the following suggestions were made to help increase his sperm production and quality?
- a. Quit smoking, decrease alcohol consumption, and do not abuse drugs.  
*Correct. These behavioral factors are among the most common sources of infertility.*
  - b. Start a calcium regimen, consume more iron, and take a multivitamin.  
*Incorrect. Drug abuse, alcohol abuse, and cigarette smoking are sources of infertility.*
  - c. Exercise daily, increase caffeine consumption, and reduce stress.
  - d. Avoid wearing boxers shorts and switch to tighter underwear.

Answer: A

Difficulty: 2

Page: 76

Skill: C

Learning Objective: 2.15

Bloom's Taxonomy Level: Understand

41. \_\_\_\_\_ is the most common cause of infertility in women.
- a. Alcohol
  - b. Stress
  - c. Age
  - d. Smoking

Answer: C

Difficulty: 2

Page: 76

Skill: F

Learning Objective: 2.15

Bloom's Taxonomy Level: Remember

42. Of the following, which is a modern technique used for fertility treatment?
- a. artificial insemination
  - b. an infertility belt
  - c. a chastity belt
  - d. colonoscopy

Answer: A

Difficulty: 2

Page: 76

Skill: F

Learning Objective: 2.15

Bloom's Taxonomy Level: Remember

43. What is the oldest effective treatment for infertility?
- a. in vitro fertilization
  - b. nutritional supplements
  - c. surrogate motherhood

- d. artificial insemination

Answer: D

Difficulty: 1

Page: 76

Skill: F

Learning Objective: 2.15

Bloom's Taxonomy Level: Remember

44. \_\_\_\_\_ is the process in which sperm is injected directly into the uterus, and is the simplest and most effective reproductive treatment.

- a. In vitro fertilization
- b. Artificial insemination
- c. Amniocentesis
- d. Infertility injections

Answer: B

Difficulty: 2

Page: 76

Skill: F

Learning Objective: 2.15

Bloom's Taxonomy Level: Remember

45. What is the success rate of artificial insemination?

- a. 10%
- b. 40%
- c. 70%
- d. 100%

Answer: C

Difficulty: 1

Page: 76

Skill: F

Learning Objective: 2.15

Bloom's Taxonomy Level: Remember

46. What is the most common approach to female infertility if the woman cannot ovulate properly?

- a. eliminating nutritional deficiencies
- b. fertility drugs
- c. increasing the frequency of intercourse
- d. herbal therapy

Answer: B

Difficulty: 1

Page: 77

Skill: F

Learning Objective: 2.15

Bloom's Taxonomy Level: Remember

47. More than half of the women who take fertility drugs become pregnant in how many cycles (months)?

- a. 2
- b. 6
- c. 10

d. 20

Answer: B

Difficulty: 1

Page: 77

Skill: F

Learning Objective: 2.15

Bloom's Taxonomy Level: Remember

48. The use of fertility drugs increases the likelihood of all of the following except \_\_\_\_.
- a. blood clots
  - b. decreased bone density
  - c. kidney damage
  - d. damage to the ovaries

Answer: B

Difficulty: 1

Page: 77

Skill: F

Learning Objective: 2.15

Bloom's Taxonomy Level: Remember

49. Which of the following are known risks associated with fertility drugs?
- a. hypertension, cardiac arrhythmias, and gastrointestinal problems
  - b. depression, anxiety, and suicidal thoughts
  - c. blood clots, kidney damage, and damage to the ovaries
  - d. diabetes, endometriosis, and eczema

Answer: C

Difficulty: 3

Page: 77

Skill: F

Learning Objective: 2.15

Bloom's Taxonomy Level: Remember

50. Depending on the drug, what percentage of multiple births results from using fertility drugs?
- a. 1–2%
  - b. 10–25%
  - c. 40–55%
  - d. 60–75%

Answer: B

Difficulty: 1

Page: 77

Skill: F

Learning Objective: 2.15

Bloom's Taxonomy Level: Remember

51. A friend tells you that she is on a fertility drug to increase the number of follicles during ovulation and is so excited about the possibility of having twins. Based upon the reading, would you agree that she has an increased possibility of conceiving twins?
- a. Yes, fertility drugs increase the rate of multiple births by increasing the probability of releasing more than one ovum, which might lead to fraternal twins.



*Correct. Depending on the drug, 10–25% of multiple births result from using fertility drugs.*

- b. No, the use of fertility drugs is in no way related in giving birth to twins.
- c. No, having twins is unpredictable and modern medicine has not been able to alter the process in any way.
- d. Yes, infertility drugs have shown to increase the rate of identical twins; however these pregnancies have a much higher rate of miscarriage than non-multiple pregnancies.

*Incorrect. Fertility drugs increase the possibility of more than one ovum being released.*

Answer: A

Difficulty: 3

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Skill: A

Learning Objective: 2.15

Bloom's Taxonomy Level: Apply

% correct 41 a= 41 b= 6 c= 24 d= 29 r = .48

52. What fertility technique extracts ova, combines them with sperm, and after a few days, implants two or three blastocysts into the woman's uterus?
- a. in vitro fertilization
  - b. nutritional supplements
  - c. surrogate motherhood
  - d. artificial insemination

Answer: A

Difficulty: 1

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Skill: F

Learning Objective: 2.15

Bloom's Taxonomy Level: Remember

53. In vitro fertilization, or IVF, has improved in recent years. What is the current rate of success of IVF in women under 35?
- a. 15%
  - b. 40%
- Correct. Success rates for IVF are about 35% for women under 35.*
- c. 55%
  - d. 75%

Answer: B

Difficulty: 1

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Skill: F

Learning Objective: 2.15

Bloom's Taxonomy Level: Remember

54. For in vitro fertilization, or IVF, what is the current rate of success of IVF in women aged 38–40?
- a. 4%
  - b. 10%
- Incorrect. This number is too low. The current rate of success of IVF is 18% for women 38–40.*

- c. 18%

*Correct. The current rate of success of IVF is 18% for women 38–40.*

- d. 40%

Answer: C

Difficulty: 1

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Skill: F

Learning Objective: 2.15

Bloom's Taxonomy Level: Remember

55. What theory argued that for conception to occur, both the man and the woman had to emit a "seed" and that the "seed" was only released through orgasm?

a. mutual orgasm theory

b. animal theory

c. ovist theory

*Incorrect. The semence theory argued that, for conception to occur, both the man and the woman had to emit a "seed" and that the seed was only released during orgasm.*

d. semence theory

*Correct. This was the dominant theory of conception in the West for more than two millennia.*

Answer: D

Difficulty: 1

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Skill: C

Learning Objective: 2.15

Bloom's Taxonomy Level: Understand

56. In most developing countries, motherhood is an essential part of a female's identity, and if infertility occurs, she may \_\_\_\_.

a. travel to the city and seek fertility treatment

b. use herbal remedies and consult a shaman

c. become anxious and overly depressed

d. divorce her husband and seek another who is more fertile

Answer: B

Difficulty: 2

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Skill: F

Learning Objective: 2.16

Bloom's Taxonomy Level: Remember

## Short Answer Questions

57. In addition to characteristic facial features, what other types of medical/physical complications might a person caring for an individual with Down syndrome expect?

**Answer: They are more at risk for heart problems, leukemia, and cancer, and their life expectancy is lower than average.**

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Learning Objective: 2.13

Bloom's Taxonomy Level: Remember

58. Which prenatal period is considered a critical period when teratogens are most likely to have severe and enduring effects? Why?

**Answer: The embryonic period, because this is when all the major organs and systems are forming.**

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Learning Objective: 2.12

Bloom's Taxonomy Level: Remember

59. What are two consequences of a folic acid deficiency?

**Answer: Anencephaly: part of the brain is missing or deformed. Spina bifida: the spine is deformed and does not close.**

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Learning Objective: 2.12

Bloom's Taxonomy Level: Remember

60. What are the long-term effects of FASD (in addition to characteristic physiological features)?

**Answer: In childhood, there are cognitive deficits that put them behind academically and socially. In addition, in adolescence, they are at risk for delinquency, substance abuse, and depression.**

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Learning Objective: 2.12

Bloom's Taxonomy Level: Remember

61. Which test can be done earlier: amniocentesis or chorionic villus sampling (CVS)? Explain each.

**Answer: CVS can be done earlier, at about 5–10 weeks gestation versus 15–20 weeks. CVS entails inserting a tube through the vagina and into the uterus to remove cells from what will eventually be the umbilical cord. Amniocentesis involves inserting a needle into the abdomen to remove amniotic fluid, which contains cells that have been sloughed off from the developing organism. Both are used to detect genetic problems.**

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Learning Objective: 2.14

Bloom's Taxonomy Level: Understand

## Essay Questions

62. Explain how prenatal health can depend on whether the child was conceived in places where diet varies greatly, depending upon which foods are available at different times of the year.

**Answer: If there are little or no fruits or vegetables available, as in China in the 1980s, babies can be born with folic acid deficiencies. This caused anencephaly and spina bifida.**

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Learning Objective: 2.12

Bloom's Taxonomy Level: Understand

63. You are out to dinner with your friend, who is in her second trimester of pregnancy. You order a beer and she proceeds to order a glass of wine. When you raise a concern about alcohol being dangerous for the developing fetus, she replies, "My doctor told me it was okay to have a glass of wine once in a while." What is your evaluation of this advice?

**Answer:** No safe amount of alcohol has been determined during pregnancy. Even a few drinks can put a developing fetus at risk for lower height, weight, and head size, and heavy drinking causes FASD. There is a dose-response relation between alcohol and negative effects.

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Learning Objective: 2.12

Bloom's Taxonomy Level: Apply