

True / False

1. Polygenic traits are transmitted by a single pair of genes.

- a. True
- b. False

ANSWER: False

REFERENCES: 2.1 The Influence of Heredity on Development: The Nature of Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.1 - Define the terms gene and chromosome and explain how sex is determined.

KEYWORDS: Bloom's: Understand

2. Sex chromosomes utilize meiosis to divide.

- a. True
- b. False

ANSWER: True

REFERENCES: 2.1 The Influence of Heredity on Development: The Nature of Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.2 - Describe the processes of mitosis and meiosis.

KEYWORDS: Bloom's: Understand

3. The typical sex chromosome pattern for females is XY.

- a. True
- b. False

ANSWER: False

REFERENCES: 2.1 The Influence of Heredity on Development: The Nature of Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.3 - Describe the process of genetic transmission from parents to children.

KEYWORDS: Bloom's: Understand

4. Monozygotic twins are conceived from separate egg cells.

- a. True
- b. False

ANSWER: False

REFERENCES: 2.1 The Influence of Heredity on Development: The Nature of Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.3 - Describe the process of genetic transmission from parents to children.

KEYWORDS: Bloom's: Understand

5. "Carriers" for traits have two recessive genes for those traits.

- a. True
- b. False

ANSWER: False

REFERENCES: 2.2 Chromosomal and Genetic Abnormalities

LEARNING OBJECTIVES: VOYG.RATH.17.2.4 - Discuss the causes and characteristics associated with chromosomal and genetic abnormalities.

KEYWORDS: Bloom's: Understand

6. Klinefelter syndrome affects females and males equally.

- a. True
- b. False

ANSWER: False

REFERENCES: 2.2 Chromosomal and Genetic Abnormalities

LEARNING OBJECTIVES: VOYG.RATH.17.2.4 - Discuss the causes and characteristics associated with chromosomal and genetic abnormalities.

KEYWORDS: Bloom's: Understand

7. PKU, which causes intellectual disability, can be controlled by diet.

- a. True
- b. False

ANSWER: True

REFERENCES: 2.2 Chromosomal and Genetic Abnormalities

LEARNING OBJECTIVES: VOYG.RATH.17.2.4 - Discuss the causes and characteristics associated with chromosomal and genetic abnormalities.

KEYWORDS: Bloom's: Understand

8. Ultrasound is used in amniocentesis and CVS.

- a. True
- b. False

ANSWER: True

REFERENCES: 2.2 Chromosomal and Genetic Abnormalities

LEARNING OBJECTIVES: VOYG.RATH.17.2.5 - Explain the techniques for prenatal testing for various genetic disorders.

KEYWORDS: Bloom's: Understand

9. Our phenotype is influenced by the environment.

- a. True
- b. False

ANSWER: True

REFERENCES: 2.3 Heredity and the Environment: Nature Versus Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.6 - Define the terms genotype and phenotype and describe what we know about the relative influences of nature versus nurture based on studies.

KEYWORDS: Bloom's: Understand

10. Parents and children have a 25% overlap in genes.

- a. True
- b. False

ANSWER: False

REFERENCES: 2.3 Heredity and the Environment: Nature Versus Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.6 - Define the terms genotype and phenotype and describe what we know about the relative influences of nature versus nurture based on studies.

KEYWORDS: Bloom's: Understand

11. Male fetuses have a lower rate of spontaneous abortion than females.

- a. True
- b. False

ANSWER: False

REFERENCES: 2.4 Conception: Against All Odds

LEARNING OBJECTIVES: VOYG.RATH.17.2.7 - Outline the process of conception.

KEYWORDS: Bloom's: Understand

12. The term "infertility" is applied to couples that have failed to conceive for a year or more.

- a. True
- b. False

ANSWER: True

REFERENCES: 2.5 Infertility and Assisted Reproductive Technology

LEARNING OBJECTIVES: VOYG.RATH.17.2.8 - Discuss causes of infertility and methods couples can use to conceive.

KEYWORDS: Bloom's: Understand

13. Pelvic inflammatory disease (PID) can result from a variety of bacterial or viral infections.

- a. True
- b. False

ANSWER: True

REFERENCES: 2.5 Infertility and Assisted Reproductive Technology

LEARNING OBJECTIVES: VOYG.RATH.17.2.8 - Discuss causes of infertility and methods couples can use to conceive.

KEYWORDS: Bloom's: Understand

14. Preimplantation genetic diagnosis is a reliable method for selecting the sex of a child.

- a. True
- b. False

ANSWER: True

REFERENCES: 2.5 Infertility and Assisted Reproductive Technology

LEARNING OBJECTIVES: VOYG.RATH.17.2.8 - Discuss causes of infertility and methods couples can use to conceive.

KEYWORDS: Bloom's: Understand

15. Mothers who give up their children for adoption often experience guilt, feelings of loss, and curiosity about how their child is developing and adjusting.
- True
 - False

ANSWER: True

REFERENCES: 2.5 Infertility and Assisted Reproductive Technology

LEARNING OBJECTIVES: VOYG.RATH.17.2.8 - Discuss causes of infertility and methods couples can use to conceive.

KEYWORDS: Bloom's: Understand

Multiple Choice

16. Heredity is defined as
- the biological transmission of traits and characteristics that is passed from parent to child by means of genes.
 - the spiral shaped structures found in cells.
 - traits that are determined by pairs of genes.
 - the process of cell division.

ANSWER: a

REFERENCES: 2.1 The Influence of Heredity on Development: The Nature of Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.1 - Define the terms gene and chromosome and explain how sex is determined.

KEYWORDS: Bloom's: Remember

17. The branch of biology that studies heredity is called
- etiology.
 - genetics.
 - molecular biology.
 - gametogenesis.

ANSWER: b

REFERENCES: 2.1 The Influence of Heredity on Development: The Nature of Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.1 - Define the terms gene and chromosome and explain how sex is determined.

KEYWORDS: Bloom's: Remember

18. Genetics appears to play a role in not only the transmission of physical traits, such as height and eye color, but also in
- one's willingness to work hard to achieve their goals.
 - personality traits such as shyness and anxiety.
 - socioeconomic status.
 - culture.

ANSWER: b

REFERENCES: The Influence of Heredity on Development: The Nature of Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.1 - Define the terms gene and chromosome and explain how sex is determined.

KEYWORDS: Bloom's: Remember

19. "Heredity" means

- a. the biological transmission of traits and characteristics from one generation to another.
- b. how your traits manifest themselves in your characteristics.
- c. how cells divide to determine who we become.
- d. how genes combine to influence our phenotype.

ANSWER: a

REFERENCES: 2.1 The Influence of Heredity on Development: The Nature of Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.1 - Define the terms gene and chromosome and explain how sex is determined.

KEYWORDS: Bloom's: Remember

20. Chromosomes contain thousands of segments called

- a. nuclei.
- b. genes.
- c. phosphates.
- d. cytosines.

ANSWER: b

REFERENCES: 2.1 The Influence of Heredity on Development: The Nature of Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.1 - Define the terms gene and chromosome and explain how sex is determined.

KEYWORDS: Bloom's: Remember

21. What shape best describes most chromosomes?

- a. Cone
- b. Rod
- c. An X
- d. An octagon

ANSWER: b

REFERENCES: 2.1 The Influence of Heredity on Development: The Nature of Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.1 - Define the terms gene and chromosome and explain how sex is determined.

KEYWORDS: Bloom's: Remember

22. A normal human cell contains ____ chromosomes organized into ____ pairs.

- a. 20; 10
- b. 32; 16
- c. 46; 23
- d. 48; 24

ANSWER: c

REFERENCES: 2.1 The Influence of Heredity on Development: The Nature of Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.1 - Define the terms gene and chromosome and explain how sex is determined.

KEYWORDS: Bloom's: Remember

23. Some traits, such as blood type, are transmitted by a single pair of genes. Other traits are determined by combinations of pairs of genes. These traits are called
- monogenic.
 - polygenic.
 - multigenic.
 - recessive.

ANSWER: b

REFERENCES: 2.1 The Influence of Heredity on Development: The Nature of Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.1 - Define the terms gene and chromosome and explain how sex is determined.

KEYWORDS: Bloom's: Remember

24. Polygenic traits
- are transmitted by a single pair of genes.
 - are uncommon in humans.
 - are transmitted by the mother.
 - come from the combination of more than one gene.

ANSWER: d

REFERENCES: 2.1 The Influence of Heredity on Development: The Nature of Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.1 - Define the terms gene and chromosome and explain how sex is determined.

KEYWORDS: Bloom's: Understand

25. Research into the human genome has found that human beings have ____ genes in every cell of their bodies.
- 1,000-1,500
 - 10,000-20,000
 - 20,000-25,000
 - 40,000-50,000

ANSWER: c

REFERENCES: 2.1 The Influence of Heredity on Development: The Nature of Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.1 - Define the terms gene and chromosome and explain how sex is determined.

KEYWORDS: Bloom's: Remember

26. A DNA molecule most closely resembles
- a twisting ladder.
 - a straight ladder.
 - an octagon.
 - interlocking circles.

ANSWER: a

REFERENCES: 2.1 The Influence of Heredity on Development: The Nature of Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.1 - Define the terms gene and chromosome and explain how sex is determined.

KEYWORDS: Bloom's: Remember

27. In DNA, the sides of the ladder consist of alternating segments of phosphate and
- adenine.
 - thymine.
 - cytosine.
 - simple sugar.

ANSWER: d

REFERENCES: 2.1 The Influence of Heredity on Development: The Nature of Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.1 - Define the terms gene and chromosome and explain how sex is determined.

KEYWORDS: Bloom's: Remember

28. Which of these is the smallest?
- A gene
 - The DNA helix
 - A cell
 - A zygote

ANSWER: a

REFERENCES: 2.1 The Influence of Heredity on Development: The Nature of Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.1 - Define the terms gene and chromosome and explain how sex is determined.

KEYWORDS: Bloom's: Remember

29. In DNA, adenine is paired with ____ and cytosine with ____.
- thymine; simple sugar
 - thymine; guanine
 - guanine; simple sugar
 - guanine; thymine

ANSWER: b

REFERENCES: 2.1 The Influence of Heredity on Development: The Nature of Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.1 - Define the terms gene and chromosome and explain how sex is determined.

KEYWORDS: Bloom's: Remember

30. Each cell in our body
- contains 26 chromosomes.
 - is turned "on" or "off" by cytosine.
 - contains 20,000 to 25,000 genes.
 - is capable of reproducing an infinite number of times.

ANSWER: c

REFERENCES: 2.1 The Influence of Heredity on Development: The Nature of Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.1 - Define the terms gene and chromosome and explain how sex is determined.

KEYWORDS: Bloom's: Remember

31. Of the 46 chromosomes in a normal human cell, how many are contributed by the mother?

- a. All
- b. It depends upon the gender of the child.
- c. Twenty-three
- d. None

ANSWER: c

REFERENCES: 2.1 The Influence of Heredity on Development: The Nature of Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.1 - Define the terms gene and chromosome and explain how sex is determined.

KEYWORDS: Bloom's: Remember

32. Of the 46 chromosomes in a normal human cell, how many are contributed by the father?

- a. All
- b. It depends upon the gender of the child.
- c. Twenty-three
- d. None

ANSWER: c

REFERENCES: 2.1 The Influence of Heredity on Development: The Nature of Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.1 - Define the terms gene and chromosome and explain how sex is determined.

KEYWORDS: Bloom's: Remember

33. Which of the following MOST accurately describes what genes do?

- a. Regulate the development of traits.
- b. Determine the gender of the child.
- c. Work together with lutein to influence development.
- d. Hardwire people for certain levels of certain traits.

ANSWER: a

REFERENCES: 2.1 The Influence of Heredity on Development: The Nature of Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.1 - Define the terms gene and chromosome and explain how sex is determined.

KEYWORDS: Bloom's: Remember

34. DNA consists of all of the following EXCEPT

- a. phosphate.
- b. indolamine.
- c. cytosine.
- d. guanine.

ANSWER: b

REFERENCES: 2.1 The Influence of Heredity on Development: The Nature of Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.1 - Define the terms gene and chromosome and explain how sex is determined.

KEYWORDS: Bloom's: Remember

35. DNA stands for
- deoxyribonucleic acid.
 - dionyotic acetate.
 - diophosphate nucleic acetone.
 - dionucleic acid.

ANSWER: a

REFERENCES: 2.1 The Influence of Heredity on Development: The Nature of Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.1 - Define the terms gene and chromosome and explain how sex is determined.

KEYWORDS: Bloom's: Remember

36. Through the process of _____, our genetic code is carried into new cells in our bodies.
- mutation
 - autosome replacement
 - Mendel replication
 - mitosis

ANSWER: d

REFERENCES: 2.1 The Influence of Heredity on Development: The Nature of Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.2 - Describe the processes of mitosis and meiosis.

KEYWORDS: Bloom's: Remember

37. The process of mitosis results in new cells containing identical genetic codes. That is, unless what occurs?
- Reduction division
 - Cell death
 - Mutations
 - Neural pruning

ANSWER: c

REFERENCES: 2.1 The Influence of Heredity on Development: The Nature of Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.2 - Describe the processes of mitosis and meiosis.

KEYWORDS: Bloom's: Remember

38. Sperm and ova are produced through meiosis, otherwise known as
- cloning.
 - mutation.
 - cross-fertilization.
 - reduction division.

ANSWER: d

REFERENCES: 2.1 The Influence of Heredity on Development: The Nature of Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.2 - Describe the processes of mitosis and meiosis.

KEYWORDS: Bloom's: Understand

39. Of the 23 pairs of chromosomes, 22 pairs look alike and possess genetic information concerning the same traits. These are
- sex chromosomes.
 - identical chromosomes.
 - autosomes.
 - alleles

ANSWER: c

REFERENCES: 2.1 The Influence of Heredity on Development: The Nature of Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.2 - Describe the processes of mitosis and meiosis.

KEYWORDS: Bloom's: Remember

40. What factor determines the sex of a child?
- The sex chromosome received from the father
 - The time in the ovulation cycle conception occurs
 - The age of the mother
 - The presence or absence of teratogens at the time of conception

ANSWER: a

REFERENCES: 2.1 The Influence of Heredity on Development: The Nature of Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.2 - Describe the processes of mitosis and meiosis.

KEYWORDS: Bloom's: Remember

41. The typical sex chromosome pattern for males is ____ and for females is ____.
- XX; XY
 - XY; XX
 - XYY; XX
 - XYY; XY

ANSWER: b

REFERENCES: 2.1 The Influence of Heredity on Development: The Nature of Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.2 - Describe the processes of mitosis and meiosis.

KEYWORDS: Bloom's: Remember

42. If a woman produced two ova in the same month and these are fertilized by different sperm cells, the result is
- monozygotic twins.
 - dizygotic twins.
 - homozygous twins.
 - a single pregnancy.

ANSWER: b

REFERENCES: 2.1 The Influence of Heredity on Development: The Nature of Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.2 - Describe the processes of mitosis and meiosis.

KEYWORDS: Bloom's: Remember

43. A zygote that divides into two genetically identical replicas is called
- monozygotic twins.
 - dizygotic twins.
 - cross-fertilization.
 - mitosis.

ANSWER: a

REFERENCES: 2.1 The Influence of Heredity on Development: The Nature of Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.2 - Describe the processes of mitosis and meiosis.

KEYWORDS: Bloom's: Remember

44. Of twin pregnancies, how many of these are dizygotic twins?
- One-half
 - One-third
 - Two-thirds
 - One-fourth

ANSWER: c

REFERENCES: 2.1 The Influence of Heredity on Development: The Nature of Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.2 - Describe the processes of mitosis and meiosis.

KEYWORDS: Bloom's: Remember

45. Which statement is MOST accurate about monozygotic twins?
- They are also called "fraternal" twins.
 - They result when two eggs are fertilized.
 - They occur with different frequency in different ethnic groups.
 - They are more common in older women.

ANSWER: d

REFERENCES: 2.1 The Influence of Heredity on Development: The Nature of Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.2 - Describe the processes of mitosis and meiosis.

KEYWORDS: Bloom's: Remember

46. Which statement about monozygotic twins is *FALSE*?
- Monozygotic twins usually include one male and one female child.
 - Monozygotic twins are also called "identical" twins.
 - Monozygotic twins are more common now than in the past.
 - Monozygotic twins occur with equal frequency among all ethnic groups.

ANSWER: a

REFERENCES: 2.1 The Influence of Heredity on Development: The Nature of Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.2 - Describe the processes of mitosis and meiosis.

KEYWORDS: Bloom's: Remember

47. Which statement about dizygotic twins is MOST accurate?
- They are more common among African Americans than any other ethnic or racial group.
 - They are more common among Asian Americans.
 - They are more common among European Americans.
 - They occur with equal frequency among all ethnic and racial groups.

ANSWER: a

REFERENCES: 2.1 The Influence of Heredity on Development: The Nature of Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.2 - Describe the processes of mitosis and meiosis.

KEYWORDS: Bloom's: Remember

48. A woman who gives birth to dizygotic twins
- is most likely an Asian American.
 - has a decreased chance of subsequent pregnancies.
 - is likely to be a young mother.
 - has an increased chance of giving birth to twins in future pregnancies.

ANSWER: d

REFERENCES: 2.1 The Influence of Heredity on Development: The Nature of Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.2 - Describe the processes of mitosis and meiosis.

KEYWORDS: Bloom's: Remember

49. The chance of conceiving twins increases with parental age due to ____ and ____.
- irregular ovulation; the use of fertility drugs
 - irregular sperm; the use of fertility drugs
 - irregular ovulation; irregular sperm
 - irregular sperm; genetic irregularities in ovum

ANSWER: a

REFERENCES: 2.1 The Influence of Heredity on Development: The Nature of Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.2 - Describe the processes of mitosis and meiosis.

KEYWORDS: Bloom's: Understand

50. Each member of a pair of genes is referred to as a(n)
- homozygous trait.
 - heterozygous trait.
 - autosome.
 - allele.

ANSWER: d

REFERENCES: 2.1 The Influence of Heredity on Development: The Nature of Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.3 - Describe the process of genetic transmission from parents to children.

KEYWORDS: Bloom's: Remember

51. Gregor Mendel, in his work with pea plants, discovered that the offspring from crossing purebred tall pea plants with purebred dwarf pea plants were tall. Mendel called this the law of
- codominance.
 - dominance.
 - dominant autosomes.
 - epigenesis.

ANSWER: b

REFERENCES: The Influence of Heredity on Development: The Nature of Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.3 - Describe the process of genetic transmission from parents to children.

KEYWORDS: Bloom's: Remember

52. If a child receives a dominant allele for brown hair from one parent and a recessive allele for blonde hair from the other, what do we know?
- The child will have blonde hair.
 - We cannot predict the potential hair color of the child based upon this information.
 - The child will have brown hair.
 - The child will be female.

ANSWER: c

REFERENCES: 2.1 The Influence of Heredity on Development: The Nature of Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.3 - Describe the process of genetic transmission from parents to children.

KEYWORDS: Bloom's: Apply

53. If a child receives an allele for blue eyes and an allele for brown eyes, then the child is
- going to have blue eyes.
 - homozygous for that trait.
 - heterozygous for that trait.
 - exhibiting the law of recession.

ANSWER: c

REFERENCES: 2.1 The Influence of Heredity on Development: The Nature of Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.3 - Describe the process of genetic transmission from parents to children.

KEYWORDS: Bloom's: Apply

54. About what percent of the offspring of brown-haired parents who carry recessive genes for blonde hair will have blond hair?
- 25%
 - 50%
 - 75%
 - 100%

ANSWER: a

REFERENCES: 2.1 The Influence of Heredity on Development: The Nature of Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.3 - Describe the process of genetic transmission from parents to children.

KEYWORDS: Bloom's: Remember

55. Dominant alleles
- will cause characteristics in individuals when paired with recessive alleles.
 - come from the father of the developing child.
 - cannot determine physical characteristics.
 - will determine physical characteristics only in offspring of the same sex as the parent that contributed that trait.

ANSWER: a

REFERENCES: 2.1 The Influence of Heredity on Development: The Nature of Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.3 - Describe the process of genetic transmission from parents to children.

56. Carriers of certain genetic characteristics can pass that gene on
- even if the other parent has a dominant gene for the same characteristic.
 - characteristics in the environment activate it.
 - they are male.
 - they also have a dominant gene for the same characteristic.

ANSWER: a

REFERENCES: 2.1 The Influence of Heredity on Development: The Nature of Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.3 - Describe the process of genetic transmission from parents to children.

KEYWORDS: Bloom's: Understand

57. Some examples of recessive traits include blonde hair, lactose intolerance, myopia, and
- curly hair.
 - type O blood.
 - type A blood.
 - farsightedness.

ANSWER: b

REFERENCES: 2.1 The Influence of Heredity on Development: The Nature of Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.3 - Describe the process of genetic transmission from parents to children.

KEYWORDS: Bloom's: Remember

58. Jake carries a dominant trait for normal vision and a recessive trait for red-green color blindness (or *protanopia*). As a result, Jake will have
- farsighted vision.
 - nearsighted vision (myopia).
 - red-green color blindness.
 - normal vision.

ANSWER: d

REFERENCES: 2.1 The Influence of Heredity on Development: The Nature of Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.3 - Describe the process of genetic transmission from parents to children.

KEYWORDS: Bloom's: Apply

59. Someone suffering from cystic fibrosis
- carries it as a recessive gene.
 - suffer from an inability to produce mucus.
 - has more than 23 chromosomal pairs.
 - is likely to have a younger mother.

ANSWER: a

REFERENCES: 2.2 Chromosomal and Genetic Abnormalities

LEARNING OBJECTIVES: VOYG.RATH.17.2.4 - Discuss the causes and characteristics associated with chromosomal and genetic abnormalities.

KEYWORDS: Bloom's: Understand

60. The following is caused by a single pair of genes
- cystic fibrosis.
 - Down syndrome.
 - sex-linked chromosomal abnormalities.
 - Crohn's disease.

ANSWER: a

REFERENCES: 2.1 The Influence of Heredity on Development: The Nature of Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.4 - Discuss the causes and characteristics associated with chromosomal and genetic abnormalities.

KEYWORDS: Bloom's: Remember

61. Diabetes mellitus, epilepsy, and peptic ulcers are multifactorial problems. That means that they
- have unknown causes.
 - are the result of genetics.
 - are the result of factors in the person's environment.
 - reflect genetic and environmental causes.

ANSWER: d

REFERENCES: 2.1 The Influence of Heredity on Development: The Nature of Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.4 - Discuss the causes and characteristics associated with chromosomal and genetic abnormalities.

KEYWORDS: Bloom's: Remember

62. Dev is 45 years old. Compared to men who are below the age of 30, Dev is five to six times more likely to have a child with
- red-green color blindness.
 - Turner's syndrome.
 - cystic fibrosis.
 - autistic disorders

ANSWER: d

REFERENCES: 2.2 Chromosomal and Genetic Abnormalities

LEARNING OBJECTIVES: VOYG.RATH.17.2.4 - Discuss the causes and characteristics associated with chromosomal and genetic abnormalities.

KEYWORDS: Bloom's: Apply

63. There is a positive correlation between age of parents and incidence of Down syndrome. What does this mean?
- Younger parents are more likely to have children with Down syndrome.
 - Older parents are more likely to have children with Down syndrome.
 - Older parents are less likely to have children with Down syndrome.
 - All parents, regardless of their age, are equally likely to have children with Down syndrome.

ANSWER: b

REFERENCES: 2.2 Chromosomal and Genetic Abnormalities

LEARNING OBJECTIVES: VOYG.RATH.17.2.4 - Discuss the causes and characteristics associated with chromosomal and genetic abnormalities.

KEYWORDS: Bloom's: Understand

64. Individuals with Down syndrome
- do not typically suffer adjustment problems.
 - have few, if any, physical problems.
 - show deficits in cognitive development.
 - have chromosomal damage on the eighth chromosome.

ANSWER: c

REFERENCES: 2.2 Chromosomal and Genetic Abnormalities

LEARNING OBJECTIVES: VOYG.RATH.17.2.4 - Discuss the causes and characteristics associated with chromosomal and genetic abnormalities.

KEYWORDS: Bloom's: Remember

65. Down syndrome is linked to
- alcohol abuse by the father.
 - abnormalities of the 21st pair of chromosomes.
 - sex-linked chromosomal abnormalities.
 - the teratogenic effects of contracting rubella during pregnancy.

ANSWER: b

REFERENCES: 2.2 Chromosomal and Genetic Abnormalities

LEARNING OBJECTIVES: VOYG.RATH.17.2.4 - Discuss the causes and characteristics associated with chromosomal and genetic abnormalities.

KEYWORDS: Bloom's: Remember

66. The textbook suggests that XYY males are over-represented in prison populations. This suggests that
- they may be less intelligent than "normal."
 - they are much less aggressive than is "normal."
 - they commit more crimes against persons, not property.
 - more people with XYY chromosomal patterns come from non-dominant (minority) groups.

ANSWER: a

DIFFICULTY: Conceptual

REFERENCES: 2.2 Chromosomal and Genetic Abnormalities

LEARNING OBJECTIVES: VOYG.RATH.17.2.4 - Discuss the causes and characteristics associated with chromosomal and genetic abnormalities.

67. Males with XYY sex chromosomal structure
- tend to be shorter than average.
 - have higher levels of intelligence than average.
 - are often mildly delayed, such as in language development.
 - are much less aggressive than average.

ANSWER: c

REFERENCES: 2.2 Chromosomal and Genetic Abnormalities

LEARNING OBJECTIVES: VOYG.RATH.17.2.4 - Discuss the causes and characteristics associated with chromosomal and genetic abnormalities.

KEYWORDS: Bloom's: Remember

68. What is the approximate rate of occurrence of males who have an extra Y chromosome, resulting in the configuration XYY?
- a. Zero, because this disorder affects females only
 - b. One in 50 to 70
 - c. One in 700 to 1,000
 - d. One in 3

ANSWER: c

REFERENCES: 2.2 Chromosomal and Genetic Abnormalities

LEARNING OBJECTIVES: VOYG.RATH.17.2.4 - Discuss the causes and characteristics associated with chromosomal and genetic abnormalities.

KEYWORDS: Bloom's: Remember

69. In comparison to the average male population, individuals with Klinefelter syndrome produce
- a. more estrogen than normal.
 - b. less estrogen than normal.
 - c. more testosterone than normal.
 - d. less testosterone than normal.

ANSWER: d

REFERENCES: 2.2 Chromosomal and Genetic Abnormalities

LEARNING OBJECTIVES: VOYG.RATH.17.2.4 - Discuss the causes and characteristics associated with chromosomal and genetic abnormalities.

KEYWORDS: Bloom's: Remember

70. What is the incidence, or rate of occurrence, of Klinefelter syndrome?
- a. 1 in 150 women
 - b. 1 in 300 men
 - c. 1 in 500 men
 - d. 1 in 2,500 women

ANSWER: c

REFERENCES: 2.2 Chromosomal and Genetic Abnormalities

LEARNING OBJECTIVES: VOYG.RATH.17.2.4 - Discuss the causes and characteristics associated with chromosomal and genetic abnormalities.

KEYWORDS: Bloom's: Remember

71. Roger is undergoing treatment for a sex-linked chromosomal abnormality. He is treated with testosterone replacement therapy, which fosters the growth of male sex characteristics and elevates his mood, but does not reverse his infertility. Roger is being treated for
- Klinefelter syndrome.
 - Turner syndrome.
 - “Supermale” syndrome.
 - Down syndrome.

ANSWER: a

REFERENCES: 2.2 Chromosomal and Genetic Abnormalities

LEARNING OBJECTIVES: VOYG.RATH.17.2.4 - Discuss the causes and characteristics associated with chromosomal and genetic abnormalities.

KEYWORDS: Bloom’s: Apply

72. A girl who does not develop breasts or menstruate
- likely produces low levels of testosterone.
 - may have only one Y sex chromosome.
 - may have Turner syndrome.
 - should be screened for Klinefelter syndrome.

ANSWER: c

REFERENCES: 2.2 Chromosomal and Genetic Abnormalities

LEARNING OBJECTIVES: VOYG.RATH.17.2.4 - Discuss the causes and characteristics associated with chromosomal and genetic abnormalities.

KEYWORDS: Bloom’s: Apply

73. Girls with Turner syndrome
- are physically the same as girls who do not have Turner’s syndrome.
 - produce little estrogen.
 - produce more testosterone than normal.
 - are more likely to give birth to twins.

ANSWER: b

REFERENCES: 2.2 Chromosomal and Genetic Abnormalities

LEARNING OBJECTIVES: VOYG.RATH.17.2.4 - Discuss the causes and characteristics associated with chromosomal and genetic abnormalities.

KEYWORDS: Bloom’s: Remember

74. Compared to girls with XY sex chromosomes, girls with Turner syndrome
- have an extra X sex chromosome.
 - have an extra Y sex chromosome.
 - are taller than average.
 - have a single X sex chromosome.

ANSWER: d

REFERENCES: 2.2 Chromosomal and Genetic Abnormalities

LEARNING OBJECTIVES: VOYG.RATH.17.2.4 - Discuss the causes and characteristics associated with chromosomal and genetic abnormalities.

KEYWORDS: Bloom's: Remember

75. Anya is female. She is infertile and has trouble with visual-spatial skills and mathematics, and also struggles with her nonverbal memory. She most likely has
- Turner syndrome.
 - Single X syndrome.
 - Triple Y syndrome.
 - “Superfemale” syndrome.

ANSWER: a

REFERENCES: 2.2 Chromosomal and Genetic Abnormalities

LEARNING OBJECTIVES: VOYG.RATH.17.2.4 - Discuss the causes and characteristics associated with chromosomal and genetic abnormalities.

KEYWORDS: Bloom's: Apply

76. What outcome is likely if both parents are carriers of PKU?
- One child out of four will develop the disorder.
 - None of the children will develop the disorder.
 - Their daughters are more likely to develop the disorder than their sons.
 - All of their children will develop the disorder.

ANSWER: a

REFERENCES: 2.2 Chromosomal and Genetic Abnormalities

LEARNING OBJECTIVES: VOYG.RATH.17.2.4 - Discuss the causes and characteristics associated with chromosomal and genetic abnormalities.

KEYWORDS: Bloom's: Remember

77. Phenylketonuria is
- an enzyme disorder.
 - transmitted by a dominant gene.
 - a disorder that manifests itself in all children of carriers.
 - an illness that can only occur in boys.

ANSWER: a

REFERENCES: 2.2 Chromosomal and Genetic Abnormalities

LEARNING OBJECTIVES: VOYG.RATH.17.2.4 - Discuss the causes and characteristics associated with chromosomal and genetic abnormalities.

KEYWORDS: Bloom's: Remember

78. Children with PKU
- a. cannot eat fruits or vegetables.
 - b. have damage to the 21st pair of chromosomes.
 - c. should be placed on a special diet at soon as possible after birth.
 - d. usually live for only a few weeks.

ANSWER: c

REFERENCES: 2.2 Chromosomal and Genetic Abnormalities

LEARNING OBJECTIVES: VOYG.RATH.17.2.4 - Discuss the causes and characteristics associated with chromosomal and genetic abnormalities.

KEYWORDS: Bloom's: Remember

79. Children with PKU cannot metabolize an amino acid called phenylalanine. As a result, the substance builds up in their bodies and
- a. causes them to be overweight.
 - b. causes night blindness.
 - c. causes hemophilia.
 - d. impairs central nervous system functioning.

ANSWER: d

REFERENCES: 2.2 Chromosomal and Genetic Abnormalities

LEARNING OBJECTIVES: VOYG.RATH.17.2.4 - Discuss the causes and characteristics associated with chromosomal and genetic abnormalities.

KEYWORDS: Bloom's: Remember

80. Maria and Michael have just been told that their newborn child has tested positive for PKU. What does this mean?
- a. The condition can be cured through medication.
 - b. The illness can be controlled through a strict exercise regimen.
 - c. The condition will disappear by the time their child is six months old.
 - d. Their child can develop normally if placed on a special diet early.

ANSWER: d

REFERENCES: 2.2 Chromosomal and Genetic Abnormalities

LEARNING OBJECTIVES: VOYG.RATH.17.2.4 - Discuss the causes and characteristics associated with chromosomal and genetic abnormalities.

KEYWORDS: Bloom's: Apply

81. Huntington disease is a fatal, progressive degenerative disorder. People who have Huntington disorder
- must have special diets.
 - are common, as the rate of this genetic disorder is very high.
 - usually have delayed onset of this disorder until middle adulthood.
 - use medications that cure the disorder.

ANSWER: c

REFERENCES: 2.2 Chromosomal and Genetic Abnormalities

LEARNING OBJECTIVES: VOYG.RATH.17.2.4 - Discuss the causes and characteristics associated with chromosomal and genetic abnormalities.

KEYWORDS: Bloom's: Remember

82. Huntington disease is characterized by which of the following symptoms?
- Uncontrollable muscle movements
 - Savant syndrome
 - The inability to speak
 - Mucous buildup in the lungs

ANSWER: a

REFERENCES: 2.2 Chromosomal and Genetic Abnormalities

LEARNING OBJECTIVES: VOYG.RATH.17.2.4 - Discuss the causes and characteristics associated with chromosomal and genetic abnormalities.

KEYWORDS: Bloom's: Remember

83. Which of the following individuals would be most likely to develop sickle-cell anemia?
- A Caucasian female under the age of 15
 - An African American
 - A Caucasian male of any age
 - A person of Asian heritage

ANSWER: b

REFERENCES: 2.2 Chromosomal and Genetic Abnormalities

LEARNING OBJECTIVES: VOYG.RATH.17.2.4 - Discuss the causes and characteristics associated with chromosomal and genetic abnormalities.

KEYWORDS: Bloom's: Apply

84. Sickle-cell anemia is caused by
- white blood cells that take on the shape of a sickle and clump together.
 - red blood cells that expand the blood vessels and increase the oxygen supply.
 - a recessive gene.
 - a slow destruction of the liver leading to jaundice and swollen joints.

ANSWER: c

REFERENCES: 2.2 Chromosomal and Genetic Abnormalities

LEARNING OBJECTIVES: VOYG.RATH.17.2.4 - Discuss the causes and characteristics associated with chromosomal and genetic abnormalities.

KEYWORDS: Bloom's: Remember

85. Which incidence rate most accurately represents the percentage of African Americans who are carriers of sickle-cell anemia?
- a. 1 in 5
 - b. 1 in 10
 - c. 1 in 20
 - d. 1 in 100

ANSWER: b

REFERENCES: 2.2 Chromosomal and Genetic Abnormalities

LEARNING OBJECTIVES: VOYG.RATH.17.2.4 - Discuss the causes and characteristics associated with chromosomal and genetic abnormalities.

KEYWORDS: Bloom's: Remember

86. Tia is from Central America. She has a genetic disorder caused by a recessive gene. Her symptoms include impaired cognitive skills caused by decreased oxygen supply, painful joints, and jaundice. Tia has
- a. sickle-cell anemia.
 - b. Tay-Sachs disease.
 - c. cystic fibrosis.
 - d. PKU.

ANSWER: a

REFERENCES: 2.2 Chromosomal and Genetic Abnormalities

LEARNING OBJECTIVES: VOYG.RATH.17.2.4 - Discuss the causes and characteristics associated with chromosomal and genetic abnormalities.

KEYWORDS: Bloom's: Apply

87. Which statement is *TRUE* of Tay-Sachs disease?
- a. It results in delayed blood clotting.
 - b. It is characterized by degeneration of the central nervous system.
 - c. It is caused by a dominant gene.
 - d. It is linked to the X chromosome.

ANSWER: b

REFERENCES: 2.2 Chromosomal and Genetic Abnormalities

LEARNING OBJECTIVES: VOYG.RATH.17.2.4 - Discuss the causes and characteristics associated with chromosomal and genetic abnormalities.

KEYWORDS: Bloom's: Remember

88. Which of the following individuals is *MOST* likely to have Tay-Sachs disease?

- a. A 2-year-old Jewish child of Eastern-European background
- b. A 10-year-old African American
- c. A 5-year-old European American
- d. A 20-year-old Hispanic male

ANSWER: a

DIFFICULTY: Applied

REFERENCES: 2.2 Chromosomal and Genetic Abnormalities

LEARNING OBJECTIVES: VOYG.RATH.17.2.4 - Discuss the causes and characteristics associated with chromosomal and genetic abnormalities.

89. Which of the following children (male or female) is *LEAST* likely to have Tay-Sachs disease?

- a. An 8-year-old
- b. A 4-year-old
- c. A 2-year-old
- d. A 1-year-old

ANSWER: a

REFERENCES: 2.2 Chromosomal and Genetic Abnormalities

LEARNING OBJECTIVES: VOYG.RATH.17.2.4 - Discuss the causes and characteristics associated with chromosomal and genetic abnormalities.

KEYWORDS: Bloom's: Apply

90. Tay-Sachs disease results in

- a. death, usually by 5 years of age.
- b. painful and swollen joints.
- c. thick mucus that clogs the pancreas and lungs.
- d. a lethal buildup of amino acids in the blood.

ANSWER: a

REFERENCES: 2.2 Chromosomal and Genetic Abnormalities

LEARNING OBJECTIVES: VOYG.RATH.17.2.4 - Discuss the causes and characteristics associated with chromosomal and genetic abnormalities.

KEYWORDS: Bloom's: Remember

91. People who bear one dominant and one recessive gene for a trait are

- a. going to automatically pass that characteristic on to their offspring.
- b. definitely going to develop that characteristic.
- c. called "carriers" of the recessive gene.
- d. not going to pass that characteristic on to their offspring.

ANSWER: c

REFERENCES: 2.1 The Influence of Heredity on Development: The Nature of Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.3 - Describe the process of genetic transmission from parents to children.

KEYWORDS: Bloom's: Remember

92. According to the Cystic Fibrosis Foundation,
- cystic fibrosis is the most common fatal hereditary disease among European Americans.
 - about 60,000 Americans have the disorder.
 - 1 in every 11 people is carriers of this illness.
 - cystic fibrosis is more common in European American individuals than any other group.

ANSWER: d

REFERENCES: 2.2 Chromosomal and Genetic Abnormalities

LEARNING OBJECTIVES: VOYG.RATH.17.2.4 - Discuss the causes and characteristics associated with chromosomal and genetic abnormalities.

KEYWORDS: Bloom's: Remember

93. Elliot was born with a genetic disorder that is caused by a recessive gene. His symptoms are thick mucus that clogs his pancreas and lungs. He has many respiratory infections. Elliot most likely has
- Huntington disease.
 - Tay-Sachs disease.
 - cystic fibrosis.
 - PKU.

ANSWER: c

REFERENCES: 2.2 Chromosomal and Genetic Abnormalities

LEARNING OBJECTIVES: VOYG.RATH.17.2.4 - Discuss the causes and characteristics associated with chromosomal and genetic abnormalities.

KEYWORDS: Bloom's: Apply

94. Sex-linked diseases are more likely to afflict sons of female carriers because
- males inherit two X chromosomes from their mothers.
 - males have only one X sex chromosome.
 - sex-linked disorders are recessive in fathers.
 - it is carried only on the Y chromosome.

ANSWER: b

REFERENCES: 2.2 Chromosomal and Genetic Abnormalities

LEARNING OBJECTIVES: VOYG.RATH.17.2.4 - Discuss the causes and characteristics associated with chromosomal and genetic abnormalities.

KEYWORDS: Bloom's: Understand

95. Which is true of hemophilia?
- It is more likely to afflict sons of female carriers than daughters.
 - It occurs more often in Caucasians than other racial and ethnic groups.
 - It damages the frontal lobe of the brain.
 - It often co-occurs with Down syndrome.

ANSWER: a

REFERENCES: 2.2 Chromosomal and Genetic Abnormalities

LEARNING OBJECTIVES: VOYG.RATH.17.2.4 - Discuss the causes and characteristics associated with chromosomal and genetic abnormalities.

KEYWORDS: Bloom's: Remember

96. Color blindness is
- an enzyme disorder.
 - a protein-based disorder.
 - a sex-linked abnormality.
 - found only in females.

ANSWER: c

REFERENCES: 2.2 Chromosomal and Genetic Abnormalities

LEARNING OBJECTIVES: VOYG.RATH.17.2.4 - Discuss the causes and characteristics associated with chromosomal and genetic abnormalities.

KEYWORDS: Bloom's: Remember

97. Color blindness is more likely to occur in
- males.
 - females.
 - various people, depending upon racial and ethnic background.
 - those people with higher socioeconomic status.

ANSWER: a

REFERENCES: 2.2 Chromosomal and Genetic Abnormalities

LEARNING OBJECTIVES: VOYG.RATH.17.2.4 - Discuss the causes and characteristics associated with chromosomal and genetic abnormalities.

KEYWORDS: Bloom's: Remember

98. Which of the following is *NOT* a sex-linked abnormality?
- Duchenne muscular dystrophy
 - Hemophilia
 - Color blindness
 - Down syndrome

ANSWER: d

REFERENCES: 2.2 Chromosomal and Genetic Abnormalities

LEARNING OBJECTIVES: VOYG.RATH.17.2.4 - Discuss the causes and characteristics associated with chromosomal and genetic abnormalities.

KEYWORDS: Bloom's: Remember

99. Females are less likely than males to show sex-linked disorders because females
- have higher levels of estrogen.
 - do not inherit recessive genes.
 - have an additional X chromosome.
 - have higher levels of testosterone.

ANSWER: c

REFERENCES: 2.2 Chromosomal and Genetic Abnormalities

LEARNING OBJECTIVES: VOYG.RATH.17.2.4 - Discuss the causes and characteristics associated with chromosomal and genetic abnormalities.

KEYWORDS: Bloom's: Understand

100. Genetic counseling occurs ____; prenatal testing happens ____.
- a. after a woman is pregnant; before a woman is pregnant
 - b. before a woman is pregnant; while a woman is pregnant
 - c. before conception; before conception
 - d. after conception; after conception

ANSWER: b

REFERENCES: 2.2 Chromosomal and Genetic Abnormalities

LEARNING OBJECTIVES: VOYG.RATH.17.2.5 - Explain the techniques for prenatal testing for various genetic disorders.

KEYWORDS: Bloom's: Remember

101. The primary purpose of genetic counseling is to
- a. advise couples to abort unborn children.
 - b. prove that a child will develop a certain illness.
 - c. assist potential parents in making procreation decisions.
 - d. outline the genetic risks of unprotected sex.

ANSWER: c

REFERENCES: 2.2 Chromosomal and Genetic Abnormalities

LEARNING OBJECTIVES: VOYG.RATH.17.2.5 - Explain the techniques for prenatal testing for various genetic disorders.

KEYWORDS: Bloom's: Remember

102. A couple is deciding whether or not to try and conceive a child. They meet with a health professional who asks them questions regarding their genetic heritage in order to explore whether their child might develop genetic abnormalities. This process is called
- a. prenatal testing.
 - b. genetic counseling.
 - c. chorionic villus sampling.
 - d. adoption counseling.

ANSWER: b

REFERENCES: 2.2 Chromosomal and Genetic Abnormalities

LEARNING OBJECTIVES: VOYG.RATH.17.2.5 - Explain the techniques for prenatal testing for various genetic disorders.

KEYWORDS: Bloom's: Apply

103. The following person is MOST likely to be given an amniocentesis

- a. an African-American female.
- b. an Asian-American female.
- c. a female younger than age 20.
- d. a female over the age of 35.

ANSWER: d

REFERENCES: 2.2 Chromosomal and Genetic Abnormalities

LEARNING OBJECTIVES: VOYG.RATH.17.2.5 - Explain the techniques for prenatal testing for various genetic disorders.

KEYWORDS: Bloom's: Remember

104. With amniocentesis,

- a. a biopsy is taken from the pregnant mother's spine.
- b. fluid is tested from the "sac" containing the fetus.
- c. the father's sperm is tested for genetic abnormalities.
- d. the mother's ova are tested for genetic abnormalities.

ANSWER: b

REFERENCES: 2.2 Chromosomal and Genetic Abnormalities

LEARNING OBJECTIVES: VOYG.RATH.17.2.5 - Explain the techniques for prenatal testing for various genetic disorders.

KEYWORDS: Bloom's: Remember

105. The biggest drawback to amniocentesis is that it can cause

- a. miscarriages in 1 of every 100 women who undergo the procedure.
- b. Cesarean deliveries.
- c. mental retardation.
- d. the unborn child to be infertile.

ANSWER: a

REFERENCES: 2.2 Chromosomal and Genetic Abnormalities

LEARNING OBJECTIVES: VOYG.RATH.17.2.5 - Explain the techniques for prenatal testing for various genetic disorders.

KEYWORDS: Bloom's: Remember

106. Amniocentesis is encouraged for

- a. women over the age of 25.
- b. women carrying the children of aging fathers.
- c. women, or their partners, who have family histories of monozygotic or dizygotic twins.
- d. women who are carrying their first pregnancy.

ANSWER: b

REFERENCES: 2.2 Chromosomal and Genetic Abnormalities

LEARNING OBJECTIVES: VOYG.RATH.17.2.5 - Explain the techniques for prenatal testing for various genetic disorders.

KEYWORDS: Bloom's: Remember

107. The earliest detection of fetal abnormalities is possible with the use of

- a. amniocentesis.
- b. ultrasound.
- c. chorionic villus sampling.
- d. fetoscopy.

ANSWER: c

REFERENCES: 2.2 Chromosomal and Genetic Abnormalities

LEARNING OBJECTIVES: VOYG.RATH.17.2.5 - Explain the techniques for prenatal testing for various genetic disorders.

KEYWORDS: Bloom's: Remember

108. Molly is in her 10th week of pregnancy. She is undergoing a procedure in which small threads are removed from the outer membrane that envelops the amniotic sac and fetus. Which procedure is she undergoing?

- a. Cervical variability study
- b. Chorionic villus sampling
- c. Ultrasound sonography
- d. Amniocentesis

ANSWER: b

DIFFICULTY: Applied

REFERENCES: 2.2 Chromosomal and Genetic Abnormalities

LEARNING OBJECTIVES: VOYG.RATH.17.2.5 - Explain the techniques for prenatal testing for various genetic disorders.

109. Which of the following is TRUE regarding amniocentesis and CVS?

- a. The risks of spontaneous abortion are higher with CVS than with amniocentesis.
- b. Both are performed 14 to 16 weeks after conception.
- c. Any trained practitioner can carry out the procedures with equal skill.
- d. Both involve the examination of villi from the membrane that envelops the amniotic sac and fetus.

ANSWER: c

REFERENCES: 2.2 Chromosomal and Genetic Abnormalities

LEARNING OBJECTIVES: VOYG.RATH.17.2.5 - Explain the techniques for prenatal testing for various genetic disorders.

KEYWORDS: Bloom's: Understand

110. An ultrasound

- a. uses x-ray photography to make a picture of the unborn child.
- b. can be heard by the human ear.
- c. yields a picture called a CT-scan.
- d. bounces sound waves off of the fetus.

ANSWER: d

REFERENCES: 2.2 Chromosomal and Genetic Abnormalities

LEARNING OBJECTIVES: VOYG.RATH.17.2.5 - Explain the techniques for prenatal testing for various genetic disorders.

KEYWORDS: Bloom's: Remember

111. A sonogram is produced by using

- a. ultrasound.
- b. fetoscopy.
- c. chorionic villus sampling.
- d. amniocentesis.

ANSWER: a

REFERENCES: 2.2 Chromosomal and Genetic Abnormalities

LEARNING OBJECTIVES: VOYG.RATH.17.2.5 - Explain the techniques for prenatal testing for various genetic disorders.

KEYWORDS: Bloom's: Remember

112. Ultrasound can be used to detect

- a. Klinefelter syndrome.
- b. cystic fibrosis.
- c. PKU.
- d. position of the fetus.

ANSWER: d

REFERENCES: 2.2 Chromosomal and Genetic Abnormalities

LEARNING OBJECTIVES: VOYG.RATH.17.2.5 - Explain the techniques for prenatal testing for various genetic disorders.

KEYWORDS: Bloom's: Remember

113. Mia's fetus has Rh disease, and an intrauterine transfusion is necessary. Which of the following procedures will generate a picture of the fetus to determine fetal positioning and fetal structures?

- a. Ultrasound
- b. CVS
- c. AFP assay
- d. Amniocentesis

ANSWER: a

REFERENCES: 2.2 Chromosomal and Genetic Abnormalities

LEARNING OBJECTIVES: VOYG.RATH.17.2.5 - Explain the techniques for prenatal testing for various genetic disorders.

KEYWORDS: Bloom's: Apply

114. The prenatal screening procedure that poses LEAST risk to the fetus is
- amniocentesis.
 - genetic counseling.
 - chorionic villus sampling.
 - alpha-fetoprotein assay (AFP).

ANSWER: d

REFERENCES: 2.2 Chromosomal and Genetic Abnormalities

LEARNING OBJECTIVES: VOYG.RATH.17.2.5 - Explain the techniques for prenatal testing for various genetic disorders.

KEYWORDS: Bloom's: Remember

115. ____ is used to detect neural tube defects such as spina bifida.
- Genetic counseling
 - Alpha-fetoprotein assay (AFP)
 - Ultrasound
 - Rh disease test

ANSWER: b

REFERENCES: 2.2 Chromosomal and Genetic Abnormalities

LEARNING OBJECTIVES: VOYG.RATH.17.2.5 - Explain the techniques for prenatal testing for various genetic disorders.

KEYWORDS: Bloom's: Remember

116. Alpha-fetoprotein assay (AFP) can be used to
- assess sex chromosome abnormalities.
 - detect neural tube defects.
 - assess degree of mental retardation.
 - measure insulin levels in the fetus.

ANSWER: b

REFERENCES: 2.2 Chromosomal and Genetic Abnormalities

LEARNING OBJECTIVES: VOYG.RATH.17.2.5 - Explain the techniques for prenatal testing for various genetic disorders.

KEYWORDS: Bloom's: Remember

117. If a mother has an elevated AFP level, this means her fetus
- has a neural tube defects.
 - may have neural tube defects and this would be examined by amniocentesis or ultrasound.
 - has a sex-linked disorder.
 - will be born early.

ANSWER: b

REFERENCES: 2.2 Chromosomal and Genetic Abnormalities

LEARNING OBJECTIVES: VOYG.RATH.17.2.5 - Explain the techniques for prenatal testing for various genetic disorders.

KEYWORDS: Bloom's: Apply

118. Of the following, the accurate statement is
- a. there is no risk associated with fetal testing.
 - b. although there is some risk with fetal testing, it is sometimes necessary.
 - c. because of risk, fetal testing should not be done.
 - d. the risk in fetal testing is to the mother, not the fetus.

ANSWER: b

REFERENCES: 2.2 Chromosomal and Genetic Abnormalities

LEARNING OBJECTIVES: VOYG.RATH.17.2.5 - Explain the techniques for prenatal testing for various genetic disorders.

KEYWORDS: Bloom's: Understand

119. Our inherited traits can vary in expression given our unique environments. This is referred to as
- a. reaction range.
 - b. phenotype.
 - c. genotype.
 - d. "averaging" of genetic instructions carried by one's parents.

ANSWER: a

REFERENCES: 2.3 Heredity and the Environment: Nature Versus Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.6 - Define the terms genotype and phenotype and describe what we know about the relative influences of nature versus nurture based on studies

KEYWORDS: Bloom's: Understand

120. Charlotte inherited personality traits, such as her activity and sociability levels, from her parents. Traits we inherit from our parents are referred to as our
- a. phenotype.
 - b. temperament.
 - c. genotype.
 - d. personality.

ANSWER: c

REFERENCES: 2.3 Heredity and the Environment: Nature Versus Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.6 - Define the terms genotype and phenotype and describe what we know about the relative influences of nature versus nurture based on studies.

KEYWORDS: Bloom's: Apply

121. Theo not only inherited a tendency to be of very high intelligence from his parents, but on IQ tests, he scores very high. Our actual set of traits that we exhibit, such as an excellent performance on an IQ test, is called
- phenotype.
 - temperament.
 - genotype.
 - personality.

ANSWER: a

REFERENCES: 2.3 Heredity and the Environment: Nature Versus Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.6 - Define the terms genotype and phenotype and describe what we know about the relative influences of nature versus nurture based on studies.

KEYWORDS: Bloom's: Apply

122. Because Sebastian lacks access to healthy food, he may not grow to be as tall as he could. However, if healthy food becomes available, his body may “snap back into its genetically determined path.” What is the term used to describe this process?
- Canalization
 - Invariant development
 - Chromosomalization
 - Genotype expression

ANSWER: a

REFERENCES: 2.3 Heredity and the Environment: Nature Versus Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.6 - Define the terms genotype and phenotype and describe what we know about the relative influences of nature versus nurture based on studies

KEYWORDS: Bloom's: Apply

123. Which of the following is LESS highly canalized?
- Learning to sit up
 - Learning to crawl
 - Learning to speak two-word utterances
 - Intelligence

ANSWER: d

REFERENCES: 2.3 Heredity and the Environment: Nature Versus Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.6 - Define the terms genotype and phenotype and describe what we know about the relative influences of nature versus nurture based on studies

KEYWORDS: Bloom's: Understand

124. Developmental psychologist Sandra Scarr described three types of correlations between genetic and environmental influences. These are passive correlation, active correlation, and ____ correlation.
- a. ongoing
 - b. evocative
 - c. restrictive
 - d. inherent

ANSWER: b

REFERENCES: 2.3 Heredity and the Environment: Nature Versus Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.6 - Define the terms genotype and phenotype and describe what we know about the relative influences of nature versus nurture based on studies.

KEYWORDS: Bloom's: Remember

125. Nicole is a long-distance runner. She believes in the importance of proper diet and exercise. As such, she provides a healthy diet for her two-year-old daughter, enrolls her in toddler gymnastic classes, and encourages her daughter's outdoor physical activities. Which of the following genetic-environment correlations does this BEST represent?
- a. Passive
 - b. Evocative
 - c. Active
 - d. Industrious

ANSWER: a

REFERENCES: 2.3 Heredity and the Environment: Nature Versus Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.6 - Define the terms genotype and phenotype and describe what we know about the relative influences of nature versus nurture based on studies.

KEYWORDS: Bloom's: Apply

126. Elijah is very shy. He is quiet and rarely seeks out other children to play with. His parents, teachers, and friends leave him alone to play and spend time by himself. Which genetic-environment correlation does this best represent?
- a. Passive
 - b. Evocative
 - c. Active
 - d. Industrious

ANSWER: b

REFERENCES: 2.3 Heredity and the Environment: Nature Versus Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.6 - Define the terms genotype and phenotype and describe what we know about the relative influences of nature versus nurture based on studies

KEYWORDS: Bloom's: Apply

127. Jenny is a high school freshman. She has always enjoyed playing musical instruments. As a result, she decides to join the marching band at her school as well as take a class in music theory. Which of the following genetic-environment correlations does this best represent?
- Passive
 - Evocative
 - Active
 - Industrious

ANSWER: b

REFERENCES: 2.3 Heredity and the Environment: Nature Versus Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.6 - Define the terms genotype and phenotype and describe what we know about the relative influences of nature versus nurture based on studies.

KEYWORDS: Bloom's: Apply

128. Matthew likes to sing, dance, and act. Due to this, he decided to join the theatre club at his high school. Choosing environments that allow us to develop inherited preferences is termed
- niche-picking.
 - epigenesist.
 - ecological interaction.
 - evocative genotype.

ANSWER: a

REFERENCES: 2.3 Heredity and the Environment: Nature Versus Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.6 - Define the terms genotype and phenotype and describe what we know about the relative influences of nature versus nurture based on studies.

KEYWORDS: Bloom's: Apply

129. Which of the following is TRUE regarding parents and their children?
- They share about 50% of their genetic material.
 - They share recessive genes only.
 - They share dominant genes only.
 - They share about 25% of their genetic material.

ANSWER: a

REFERENCES: 2.3 Heredity and the Environment: Nature Versus Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.6 - Define the terms genotype and phenotype and describe what we know about the relative influences of nature versus nurture based on studies

KEYWORDS: Bloom's: Understand

130. If genes are implicated in any given physical trait or behavior pattern, then you would expect that
- DZ twins would be more similar on the trait than MZ twins.
 - all people in a given family would express the trait similarly.
 - cousins would be more similar on the trait than siblings.
 - siblings would be more similar on the trait than cousins.

ANSWER: d

REFERENCES: 2.3 Heredity and the Environment: Nature Versus Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.6 - Define the terms genotype and phenotype and describe what we know about the relative influences of nature versus nurture based on studies.

KEYWORDS: Bloom's: Understand

131. The following twin pair would physically resemble each other the most
- dizygotic of either sex.
 - monozygotic.
 - dizygotic males.
 - monozygotic, but only if female.

ANSWER: b

REFERENCES: 2.3 Heredity and the Environment: Nature Versus Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.6 - Define the terms genotype and phenotype and describe what we know about the relative influences of nature versus nurture based on studies

KEYWORDS: Bloom's: Remember

132. In comparison to dizygotic (DZ) twins, monozygotic (MZ) twins are
- less likely to look alike or be of similar height.
 - more likely to be similar on physical characteristics, such as blood pressure and brain wave patterns.
 - less likely to share the same psychological disorders.
 - more likely to differ on levels of happiness and sociability.

ANSWER: b

REFERENCES: 2.3 Heredity and the Environment: Nature Versus Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.6 - Define the terms genotype and phenotype and describe what we know about the relative influences of nature versus nurture based on studies.

KEYWORDS: Bloom's: Understand

133. What could influence behavioral similarity in monozygotic twins?
- Parents and others who treat them alike
 - The degree of genetic similarity they share
 - Whether the twins are male or female
 - No factors in particular will influence behavioral similarity.

ANSWER: a

REFERENCES: 2.3 Heredity and the Environment: Nature Versus Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.6 - Define the terms genotype and phenotype and describe what we know about the relative influences of nature versus nurture based on studies

KEYWORDS: Bloom's: Understand

134. Dizygotic twins are MORE likely to inherit ____ than monozygotic twins.

- a. more likely to inherit schizophrenia
- b. more likely to inherit depression
- c. more likely to inherit autism
- d. less likely to inherit disorders

ANSWER: d

REFERENCES: 2.3 Heredity and the Environment: Nature Versus Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.6 - Define the terms genotype and phenotype and describe what we know about the relative influences of nature versus nurture based on studies.

KEYWORDS: Bloom's: Remember

135. Kia and Mia are monozygotic twins. At birth, they were separated and adopted by different families. Kia grew up in Los Angeles. Mia grew up in New York City. Given the research, you would expect Kia and Mia to

- a. share the same degree of genetic similarity as twins reared together.
- b. be less alike, genetically, than dizygotic twins reared together.
- c. be identical in genetics, behaviors and preferences.
- d. be no more alike in genetics, behaviors and preferences than regular siblings.

ANSWER: a

REFERENCES: 2.3 Heredity and the Environment: Nature Versus Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.6 - Define the terms genotype and phenotype and describe what we know about the relative influences of nature versus nurture based on studies

KEYWORDS: Bloom's: Apply

136. If an adopted child is more similar on a particular characteristic to his/her biological parents than to the adoptive parents, we can conclude that

- a. the adoptive parents have tried very hard to raise the child as their own.
- b. heredity is solely responsible for who we become.
- c. environment is solely responsible for who we become.
- d. genetics play a role in the development of that particular characteristic.

ANSWER: d

REFERENCES: 2.3 Heredity and the Environment: Nature Versus Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.6 - Define the terms genotype and phenotype and describe what we know about the relative influences of nature versus nurture based on studies.

KEYWORDS: Bloom's: Understand

137. At birth, the typical human female will contain

- a. enough ova to be fertile for 10 years.
- b. no ova, they only develop during puberty.
- c. around 300,000 to 400,000 ova in each ovary.
- d. millions of ova.

ANSWER: c

REFERENCES: 2.4 Conception: Against All Odds

LEARNING OBJECTIVES: VOYG.RATH.17.2.7 - Outline the process of conception.

KEYWORDS: Bloom's: Remember

138. During menstruation,
- a female is more likely to get pregnant than at any other time.
 - the unfertilized egg is discharged in menstrual flow.
 - the fertilized egg undergoes meiosis.
 - the fertilized egg undergoes mitosis.

ANSWER: b

REFERENCES: 2.4 Conception: Against All Odds

LEARNING OBJECTIVES: VOYG.RATH.17.2.7 - Outline the process of conception.

KEYWORDS: Bloom's: Remember

139. Before meiosis, the sperm cell,
- contains 46 chromosomes.
 - is significantly larger than the egg cell.
 - contains two X chromosomes.
 - is more likely to conceive a girl than a boy.

ANSWER: a

REFERENCES: 2.4 Conception: Against All Odds

LEARNING OBJECTIVES: VOYG.RATH.17.2.7 - Outline the process of conception.

KEYWORDS: Bloom's: Remember

140. The sperm cell
- is significantly larger than the egg cell.
 - contains two Y chromosomes.
 - does not determine the sex of the developing child.
 - is one of the smallest types of cells in the body.

ANSWER: d

REFERENCES: 2.4 Conception: Against All Odds

LEARNING OBJECTIVES: VOYG.RATH.17.2.7 - Outline the process of conception.

KEYWORDS: Bloom's: Remember

141. The following can be said about male conception:
- fewer males are conceived, but more survive to birth.
 - more males are conceived and more survive to birth.
 - more males are conceived and more are spontaneously aborted.
 - about the same number of males and females are conceived.

ANSWER: c

REFERENCES: 2.4 Conception: Against All Odds

LEARNING OBJECTIVES: VOYG.RATH.17.2.7 - Outline the process of conception.

KEYWORDS: Bloom's: Apply

142. About how many sperm cells are contained in a single ejaculate?

- a. Around 1,000
- b. 200 to 400 million
- c. 500,000 to 1 million
- d. Depends upon the man's progesterone levels

ANSWER: b

REFERENCES: 2.4 Conception: Against All Odds

LEARNING OBJECTIVES: VOYG.RATH.17.2.7 - Outline the process of conception.

KEYWORDS: Bloom's: Remember

143. Ova

- a. are surrounded by a gelatinous layer.
- b. do not have a gelatinous layer.
- c. are surrounded by a gelatinous layer but only after released from the ovarian follicle.
- d. develop a gelatinous layer after a sperm has penetrated the ovum.

ANSWER: a

REFERENCES: 2.4 Conception: Against All Odds

LEARNING OBJECTIVES: VOYG.RATH.17.2.7 - Outline the process of conception.

KEYWORDS: Bloom's: Remember

144. Sperm

- a. travel at random inside a woman's reproductive tract.
- b. find ovum as a matter of luck.
- c. are attracted to ova by the odor of a chemical they secrete.
- d. are attracted to ova by a sound wave they emit.

ANSWER: c

REFERENCES: 2.4 Conception: Against All Odds

LEARNING OBJECTIVES: VOYG.RATH.17.2.7 - Outline the process of conception.

KEYWORDS: Bloom's: Remember

145. Conception has occurred when

- a. the egg cell is released from the ovary.
- b. the sperm cell is released from the testis.
- c. the chromosomes from the egg cell align with those from the sperm cell.
- d. the chromosomes combine to form 23 new pairs with a unique set of genetic instructions.

ANSWER: d

REFERENCES: 2.4 Conception: Against All Odds

LEARNING OBJECTIVES: VOYG.RATH.17.2.7 - Outline the process of conception.

KEYWORDS: Bloom's: Remember

146. In American couples, infertility occurs in approximately
- one in 6 or 7 couples.
 - one in 15 couples.
 - it depends upon ethnicity.
 - it depends upon socioeconomic status.

ANSWER: a

REFERENCES: 2.5 Infertility and Assisted Reproductive Technology

LEARNING OBJECTIVES: VOYG.RATH.17.2.8 - Discuss causes of infertility and methods couples can use to conceive.

KEYWORDS: Bloom's: Remember

147. What can cause infertility problems in men?
- Excess protein in the diet
 - Lack of exercise
 - Sexually transmitted infections (STIs)
 - Excessive masturbation

ANSWER: c

REFERENCES: 2.5 Infertility and Assisted Reproductive Technology

LEARNING OBJECTIVES: VOYG.RATH.17.2.8 - Discuss causes of infertility and methods couples can use to conceive.

KEYWORDS: Bloom's: Remember

148. The sperm's ability to move is called
- involution.
 - propulsion.
 - evolution.
 - motility.

ANSWER: d

REFERENCES: 2.5 Infertility and Assisted Reproductive Technology

LEARNING OBJECTIVES: VOYG.RATH.17.2.8 - Discuss causes of infertility and methods couples can use to conceive.

KEYWORDS: Bloom's: Remember

149. What can cause infertility in women?
- Obstruction of the reproductive tract
 - Regular ovulation
 - A urinary tract infection
 - Precocious puberty

ANSWER: a

REFERENCES: 2.5 Infertility and Assisted Reproductive Technology

LEARNING OBJECTIVES: VOYG.RATH.17.2.8 - Discuss causes of infertility and methods couples can use to conceive.

KEYWORDS: Bloom's: Remember

150. The MOST common infertility problem in women is
- a. irregular ovulation or lack of ovulation.
 - b. endometriosis.
 - c. barriers to the passageways through which the ovum must pass.
 - d. pelvic inflammatory disease (PID).

ANSWER: a

REFERENCES: 2.5 Infertility and Assisted Reproductive Technology

LEARNING OBJECTIVES: VOYG.RATH.17.2.8 - Discuss causes of infertility and methods couples can use to conceive.

KEYWORDS: Bloom's: Remember

151. Lily visits her doctor to determine the cause/s of her infertility. The physician tells her that she has endometriosis and that this is caused by
- a. irregular ovulation or lack of ovulation.
 - b. chronic disease, such as diabetes.
 - c. endometrial tissue that has been sloughed off into the abdominal cavity during menstruation.
 - d. the use of fertility drugs, such as clomiphene or pergonal.

ANSWER: c

REFERENCES: 2.5 Infertility and Assisted Reproductive Technology

LEARNING OBJECTIVES: VOYG.RATH.17.2.8 - Discuss causes of infertility and methods couples can use to conceive.

KEYWORDS: Bloom's: Apply

152. Which of the following describes the process by which sperm is injected into the uterus at the time of ovulation?
- a. IVF
 - b. Artificial insemination
 - c. Donor IVF
 - d. Surrogacy

ANSWER: b

REFERENCES: 2.5 Infertility and Assisted Reproductive Technology

LEARNING OBJECTIVES: VOYG.RATH.17.2.8 - Discuss causes of infertility and methods couples can use to conceive.

KEYWORDS: Bloom's: Remembe

153. Jill does not produce ova of her own. An ovum is harvested from another woman, is fertilized in vitro, and placed into Jill's uterus where it becomes implanted and develops prenatally. Which fertility method does this best represent?
- Artificial insemination
 - IVF
 - Donor IVF
 - Surrogate mother

ANSWER: c

REFERENCES: 2.5 Infertility and Assisted Reproductive Technology

LEARNING OBJECTIVES: VOYG.RATH.17.2.8 - Discuss causes of infertility and methods couples can use to conceive.

KEYWORDS: Bloom's: Apply

154. Meghan is carrying a newly fertilized ova to term for another woman. Meghan is a(n)
- sperm donor.
 - adoptive parent.
 - surrogate.
 - IVF donor.

ANSWER: c

REFERENCES: 2.5 Infertility and Assisted Reproductive Technology

LEARNING OBJECTIVES: VOYG.RATH.17.2.8 - Discuss causes of infertility and methods couples can use to conceive.

KEYWORDS: Bloom's: Remember

155. It is estimated that the ratio of boys to girls in China is approximately 120 to 100. Why are there so many more boys than girls in China?
- Better genetic counseling
 - An increase in the use of fertility drugs
 - Higher rates of adopting boys than girls
 - Selective abortion of female fetuses

ANSWER: d

REFERENCES: 2.5 Infertility and Assisted Reproductive Technology

LEARNING OBJECTIVES: VOYG.RATH.17.2.8 - Discuss causes of infertility and methods couples can use to conceive.

KEYWORDS: Bloom's: Remember

Matching

Match the following:

- takes the form of a double helix
- person who carries and transmits characteristics but does not express them
- correlation between child's genetic endowment and responses elicited from others
- the genetic material received from parents
- caused by a recessive gene
- polygenically determined
- female sex hormone

- h. neural tube defect
- i. twins produced from a single egg
- j. cell division that results in non-identical cells
- k. union of an ovum and a sperm cell
- l. involves the membrane that envelops the amniotic sac and fetus
- m. associated with the 21st pair of chromosomes
- n. how genetic material manifests itself in characteristics
- o. twins produced from two eggs
- p. XXY sex chromosomal pattern
- q. determined by the father
- r. differing alleles for a trait
- s. caused by a dominant gene
- t. self-propulsion

REFERENCES: 2.1 The Influence of Heredity on Development: The Nature of Nurture
 2.2 Chromosomal and Genetic Abnormalities | Heredity and the Environment: Nature Versus Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.1 - Define the terms gene and chromosome and explain how sex is determined.
 VOYG.RATH.17.2.2 - Describe the processes of mitosis and meiosis.
 VOYG.RATH.17.2.3 - Describe the process of genetic transmission from parents to children.
 VOYG.RATH.17.2.4 - Discuss the causes and characteristics associated with chromosomal and genetic abnormalities.
 VOYG.RATH.17.2.6 - Define the terms genotype and phenotype and describe what we know about the relative influences of nature versus nurture based on studies.

KEYWORDS: Bloom's: Remember

156. Spina bifida

ANSWER: h

157. Monozygotic

ANSWER: i

158. Deoxyribonucleic acid (DNA)

ANSWER: a

159. Meiosis

ANSWER: j

160. Phenotype

ANSWER: n

161. Carrier

ANSWER: b

162. PKU

ANSWER: e

163. Down syndrome

ANSWER: m

164. Huntington disease

ANSWER: s

165. Intelligence

ANSWER: f

166. Dizygotic

ANSWER: o

167. Evocative genotype-environmental correlation

ANSWER: c

168. Genotype

ANSWER: d

169. Heterozygous

ANSWER: r

170. Estrogen

ANSWER: g

171. Gender of child

ANSWER: q

172. Motility

ANSWER: t

173. Chorionic villus sampling

ANSWER: l

174. Conception

ANSWER: k

175. Klinefelter syndrome

ANSWER: p

Subjective Short Answer

176. Briefly describe the difference(s) between cell division as the result of “meiosis” and cell division as the result of “mitosis.”

ANSWER: Meiosis is also referred to as “reduction division.” This means that the 46 chromosomes within the cell nucleus line up into 23 pairs. These 23 pairs then split and one member from each pair goes to each newly formed cell. Because of this, the newly formed cells have half the genetic material contained in the original cell. In this sense, the cells are not identical but share 50 percent genetic similarity. With mitosis, the identical genetic code is carried into each newly formed cell in the body. In other words, these cells, when they divide, are identical to the cells that divided to form them. Cloning results from mitosis. Because the newly formed cells are “replications” of the preceding cell, there is no genetic variability.

REFERENCES: 2.1 The Influence of Heredity on Development: The Nature of Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.2 - Describe the processes of mitosis and meiosis.

KEYWORDS: Bloom’s: Analyze

177. Briefly describe the difference(s) between “recessive” and “dominant” genes.

ANSWER: Some genes are “dominant” and others are “recessive.” Dominant genes are more likely to be expressed than recessive genes. Eye color is a good example. With eye color, brown eyes are dominant and blue eyes are recessive. If one parent carries the gene for brown eyes only and the other for blue eyes only, the offspring would have brown eyes (that color would dominate). If, however, both parents carry recessive genes for blue eyes, those can combine and blue eyes will be expressed. In a sense, two recessive genes can overcome the dominance of a single gene.

REFERENCES: 2.1 The Influence of Heredity on Development: The Nature of Nurture

LEARNING OBJECTIVES: VOYG.RATH.17.2.3 - Describe the process of genetic transmission from parents to children.

KEYWORDS: Bloom’s: Analyze

178. What are chromosomal disorders?

ANSWER: Chromosomal disorders occur when children do not have the correct pairings or complement of 46 chromosomes. Chromosomal abnormalities are more common in children of older mothers and fathers. Down syndrome, for example, is caused by having an extra chromosome on the 21st pair, resulting in 47 chromosomes. There are also disorders linked to the sex chromosomes. For example, “supermales” have an extra Y chromosome on the 23rd pair. Males with an extra X chromosome are said to have Klinefelter syndrome, characterized by underdeveloped male secondary sex characteristics and mild mental retardation. A female with a single X chromosome is said to have Turner syndrome, characterized by underdevelopment of female secondary sex characteristics and problems in mathematics and visual-spatial skills.

REFERENCES: 2.2 Chromosomal and Genetic Abnormalities

LEARNING OBJECTIVES: VOYG.RATH.17.2.4 - Discuss the causes and characteristics associated with chromosomal and genetic abnormalities.

KEYWORDS: Bloom’s: Analyze

179. A friend of yours is pregnant. She has read about the potential problems that could occur with a pregnancy. Based on this chapter, what three pieces of advice would you offer to ease this person's concerns for her unborn child?

ANSWER: The chances of problems during pregnancy are enhanced by external factors such as toxins (alcohol, smoking) and maternal characteristics (such as genetics and age at conception). Some of these things can be minimized and/or avoided. If the person is really worried, she may want to consider prenatal testing to see if there are serious disorders she might want to be aware of. Additionally, however, it should be acknowledged that genetic screening procedures do bring some element of risk to the pregnancy. The best thing the mother can do is to make the fetal environment as healthy as possible. She can exercise, take prenatal vitamins, eat a balanced diet, and refrain from smoking or ingesting alcohol and other drugs. Lastly, her overall chances of delivering a healthy child are significantly higher than of having a child with a disease or a disorder.

REFERENCES: 2.2 Chromosomal and Genetic Abnormalities

LEARNING OBJECTIVES: VOYG.RATH.17.2.5 - Explain the techniques for prenatal testing for various genetic disorders.

KEYWORDS: Bloom's: Analyze

180. A friend has asked you to describe the difference between "genotype" and "phenotype." Based upon the material in Chapter Two of the textbook, how would you describe the difference?

ANSWER: Genotype refers to the genetic material that is received from one's parents. Characteristics such as blood type and eye color, for example, are determined by our genotype. Genotype determines a range in which we might develop. It might, for example, determine how intelligent we could become. But genotype alone does not determine who or what we become. Our phenotype refers to how our characteristics are expressed. Someone might, for example, have the potential to grow quite tall. But the environment and other forces, such as nutrition, may influence how much of that genotype potential for height is realized. Phenotypes, then, are the product of both genetic and environmental influences.

REFERENCES: 2.2 Chromosomal and Genetic Abnormalities

LEARNING OBJECTIVES: VOYG.RATH.17.2.6 - Define the terms genotype and phenotype and describe what we know about the relative influences of nature versus nurture based on studies.

KEYWORDS: Bloom's: Analyze