

CHAPTER 2  
GENETIC AND ENVIRONMENTAL FOUNDATIONS

**MULTIPLE CHOICE**

1. Christine is 5'7" and has blue eyes. Such directly observable characteristics are called \_\_\_\_\_.

- A) alleles
- B) phenotypes
- C) chromosomes
- D) genotypes

Answer: B

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*Skill Level: Apply*

*Objective: 2.1 What are genes, and how are they transmitted from one generation to the next?*

*Topic: Genetic Foundations*

*Difficulty Level: Moderate*

2. Phenotypes depend in part on an individual's \_\_\_\_\_.

- A) cells
- B) chromosomes
- C) genotype
- D) DNA

Answer: C

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*Skill Level: Remember*

*Objective: 2.1 What are genes, and how are they transmitted from one generation to the next?*

*Topic: Genetic Foundations*

*Difficulty Level: Moderate*

3. Our \_\_\_\_\_ determine(s) our species and influences all our unique characteristics.

- A) genotype
- B) phenotypes
- C) regulator genes
- D) karyotype

Answer: A

*Page Ref: 43*

*Skill Level: Remember*

*Objective: 2.1 What are genes, and how are they transmitted from one generation to the next?*

*Topic: Genetic Foundations*

*Difficulty Level: Easy*

4. The \_\_\_\_\_ is the control center of a cell in the human body.

- A) genotype

- B) gamete
- C) autosome
- D) nucleus

Answer: D

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*Skill Level: Remember*

*Objective: 2.1 What are genes, and how are they transmitted from one generation to the next?*

*Topic: Genetic Foundations*

*Difficulty Level: Easy*

5. Chromosomes look like \_\_\_\_\_.

- A) spheres
- B) cones
- C) rods
- D) cubes

Answer: C

*Page Ref: 44*

*Skill Level: Remember*

*Objective: 2.1 What are genes, and how are they transmitted from one generation to the next?*

*Topic: Genetic Foundations*

*Difficulty Level: Easy*

6. Which statement about human chromosomes is true?

- A) They come in 46 matching pairs.
- B) They store and transmit genetic information.
- C) In females, each chromosome is inherited from the mother.
- D) Each member of a pair is a different length, size, and genetic function.

Answer: B

*Page Ref: 44*

*Skill Level: Understand*

*Objective: 2.1 What are genes, and how are they transmitted from one generation to the next?*

*Topic: Genetic Foundations*

*Difficulty Level: Moderate*

7. A \_\_\_\_\_ is a segment of DNA along the length of the chromosome.

- A) phenotype
- B) genotype
- C) gene
- D) gamete

Answer: C

*Page Ref: 44*

*Skill Level: Remember*

*Objective: 2.1 What are genes, and how are they transmitted from one generation to the next?*

*Topic: Genetic Foundations*

*Difficulty Level: Easy*

8. Protein-coding genes \_\_\_\_\_.
- A) directly affect our body's characteristics
  - B) modify instructions given by regulator genes
  - C) come in 23 matching pairs
  - D) are formed through meiosis

Answer: A

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Skill Level: Understand

*Objective: 2.1 What are genes, and how are they transmitted from one generation to the next?*

*Topic: Genetic Foundations*

*Difficulty Level: Moderate*

9. The area surrounding the cell nucleus is called the \_\_\_\_\_.
- A) zygote
  - B) cytoplasm
  - C) gamete
  - D) gene

Answer: B

Page Ref: 44

Skill Level: Remember

*Objective: 2.1 What are genes, and how are they transmitted from one generation to the next?*

*Topic: Genetic Foundations*

*Difficulty Level: Easy*

10. \_\_\_\_\_, which trigger chemical reactions throughout the body, are the biological foundation on which our characteristics are built.
- A) Phenotypes
  - B) Proteins
  - C) Carbohydrates
  - D) Autosomes

Answer: B

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Skill Level: Remember

*Objective: 2.1 What are genes, and how are they transmitted from one generation to the next?*

*Topic: Genetic Foundations*

*Difficulty Level: Moderate*

11. Lynn, a Canadian, and Sasha, a Russian, are probably about \_\_\_\_\_ percent genetically identical.
- A) 69.6

- B) 79.6
- C) 89.6
- D) 99.6

Answer: D

Page Ref: 44

Skill Level: Apply

Objective: 2.1 What are genes, and how are they transmitted from one generation to the next?

Topic: Genetic Foundations

Difficulty Level: Easy

12. Straightforward comparisons of human and chimpanzee DNA are misleading because \_\_\_\_\_.
- A) we do not share any of our genetic makeup with primates
  - B) it takes multiple DNA base pairs to influence human traits
  - C) the species-specific genetic material responsible for human attributes is extensive
  - D) the communication system between the cell nucleus and cytoplasm is more intricate in primates

Answer: C

Page Ref: 44

Skill Level: Understand

Objective: 2.1 What are genes, and how are they transmitted from one generation to the next?

Topic: Genetic Foundations

Difficulty Level: Difficult

13. The sperm and the ovum are sex cells, or \_\_\_\_\_.
- A) autosomes
  - B) gametes
  - C) zygotes
  - D) phenotypes

Answer: B

Page Ref: 44

Skill Level: Remember

Objective: 2.1 What are genes, and how are they transmitted from one generation to the next?

Topic: Genetic Foundations

Difficulty Level: Easy

14. Deoxyribonucleic acid (DNA) looks like a \_\_\_\_\_.
- A) long cylinder
  - B) small sphere
  - C) twisted ladder
  - D) bundle of rods

Answer: C

Page Ref: 44–45

Skill Level: Remember

*Objective: 2.1 What are genes, and how are they transmitted from one generation to the next?*

*Topic: Genetic Foundations*

*Difficulty Level: Easy*

15. A gamete \_\_\_\_\_.  
A) contains 46 chromosomes  
B) is formed through mitosis  
C) contains 23 chromosomes  
D) is formed when the chromosomes copy themselves

Answer: C

Page Ref: 44–45

Skill Level: Understand

*Objective: 2.1 What are genes, and how are they transmitted from one generation to the next?*

*Topic: Genetic Foundations*

*Difficulty Level: Moderate*

16. If a cell donor's twenty-third pair of chromosomes do not match, the cell \_\_\_\_\_.  
A) cannot be given to the recipient  
B) donor is a female  
C) does not have a nucleus  
D) donor is male

Answer: D

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Skill Level: Apply

*Objective: 2.1 What are genes, and how are they transmitted from one generation to the next?*

*Topic: Genetic Foundations*

*Difficulty Level: Difficult*

17. \_\_\_\_\_ halves the number of chromosomes normally present in body cells.  
A) Mitosis  
B) Genomic imprinting  
C) Cytoplasm  
D) Meiosis

Answer: D

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Skill Level: Understand

*Objective: 2.1 What are genes, and how are they transmitted from one generation to the next?*

*Topic: Genetic Foundations*

*Difficulty Level: Moderate*

18. When sperm and ovum unite at conception, a(n) \_\_\_\_\_ results.  
A) autosome  
B) gamete

- C) zygote
- D) allele

Answer: C

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Skill Level: Remember

Objective: 2.1 What are genes, and how are they transmitted from one generation to the next?

Topic: Genetic Foundations

Difficulty Level: Easy

19. The exchange of chromosome segments during meiosis results in \_\_\_\_\_.

- A) severe mutations
- B) incredible variability among siblings
- C) higher rates of fraternal twins
- D) higher numbers of female zygotes than male zygotes

Answer: B

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Skill Level: Understand

Objective: 2.1 What are genes, and how are they transmitted from one generation to the next?

Topic: Genetic Foundations

Difficulty Level: Moderate

20. In the male, \_\_\_\_\_ are produced when meiosis is complete.

- A) no sperm
- B) four sperm
- C) 40,000 sperm
- D) no sex cells

Answer: B

Page Ref: 45

Skill Level: Remember

Objective: 2.1 What are genes, and how are they transmitted from one generation to the next?

Topic: Genetic Foundations

Difficulty Level: Easy

21. A healthy man can father a child \_\_\_\_\_.

- A) at any age after sexual maturity
- B) for about two decades
- C) for about three decades
- D) for about four decades

Answer: A

Page Ref: 45

Skill Level: Understand

Objective: 2.1 What are genes, and how are they transmitted from one generation to the next?

*Topic: Genetic Foundations*

*Difficulty Level: Moderate*

22. In the female, meiosis results in \_\_\_\_\_.

- A) just one ovum
- B) two ova
- C) three ova
- D) four ova

Answer: A

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*Skill Level: Remember*

*Objective: 2.1 What are genes, and how are they transmitted from one generation to the next?*

*Topic: Genetic Foundations*

*Difficulty Level: Easy*

23. About \_\_\_\_\_ female sex cells are present at birth.

- A) 100 to 200
- B) 1,000 to 2,000
- C) 100,000 to 200,000
- D) 1 to 2 million

Answer: D

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*Skill Level: Understand*

*Objective: 2.1 What are genes, and how are they transmitted from one generation to the next?*

*Topic: Genetic Foundations*

*Difficulty Level: Easy*

24. Autosomes are chromosomes that are \_\_\_\_\_.

- A) sex cells
- B) zygotes
- C) not matching
- D) not sex cells

Answer: D

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*Skill Level: Understand*

*Objective: 2.1 What are genes, and how are they transmitted from one generation to the next?*

*Topic: Genetic Foundations*

*Difficulty Level: Moderate*

25. Taylor's twenty-third pair of chromosomes is XY. Taylor is \_\_\_\_\_.

- A) male
- B) a fraternal twin
- C) female

D) an identical twin

Answer: A

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Skill Level: Apply

Objective: 2.1 What are genes, and how are they transmitted from one generation to the next?

Topic: Genetic Foundations

Difficulty Level: Moderate

26. In females, the twenty-third pair of chromosomes is called \_\_\_\_\_.

A) an autosome

B) dizygotic

C) XX

D) XY

Answer: C

Page Ref: 45

Skill Level: Understand

Objective: 2.1 What are genes, and how are they transmitted from one generation to the next?

Topic: Genetic Foundations

Difficulty Level: Easy

27. Patsy and Terry are fraternal twins. This type of twinning results from \_\_\_\_\_.

A) a zygote that duplicates and separates into two clusters of cells

B) the fertilization of one ovum by two Y-bearing sperm

C) the release and fertilization of two ova

D) the fertilization of one ovum by two X-bearing sperm

Answer: C

Page Ref: 45

Skill Level: Apply

Objective: 2.1 What are genes, and how are they transmitted from one generation to the next?

Topic: Genetic Foundations

Difficulty Level: Moderate

28. Fraternal twins are \_\_\_\_\_.

A) genetically identical

B) no more alike than ordinary siblings

C) less common than other types of multiple offspring

D) less likely with each additional birth

Answer: B

Page Ref: 45

Skill Level: Understand

Objective: 2.1 What are genes, and how are they transmitted from one generation to the next?

Topic: Genetic Foundations



*Difficulty Level: Moderate*

29. Fraternal twinning occurs \_\_\_\_\_.

- A) less often with each additional birth
- B) more often among women with poor diets
- C) more often among women of slight body build
- D) more often among women whose sisters gave birth to fraternal twins

Answer: D

*Page Ref: 45*

*Skill Level: Remember*

*Objective: 2.1 What are genes, and how are they transmitted from one generation to the next?*

*Topic: Genetic Foundations*

*Difficulty Level: Moderate*

30. A zygote that separates into two clusters of cells instead of just one produces \_\_\_\_\_.

- A) identical twins
- B) dizygotic twins
- C) triplets
- D) triple X syndrome

Answer: A

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*Skill Level: Understand*

*Objective: 2.1 What are genes, and how are they transmitted from one generation to the next?*

*Topic: Genetic Foundations*

*Difficulty Level: Moderate*

31. Animal research shows that a variety of environmental influences prompt monozygotic twinning, including \_\_\_\_\_.

- A) early fertilization of the ovum
- B) young maternal age
- C) variation in oxygen levels
- D) poor diet

Answer: C

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*Skill Level: Understand*

*Objective: 2.1 What are genes, and how are they transmitted from one generation to the next?*

*Topic: Genetic Foundations*

*Difficulty Level: Moderate*

32. During their early years, children of single births often \_\_\_\_\_ than twins.

- A) develop more slowly
- B) are healthier
- C) have more shrill cries

D) are more sickly

Answer: B

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Skill Level: Understand

Objective: 2.1 What are genes, and how are they transmitted from one generation to the next?

Topic: Genetic Foundations

Difficulty Level: Moderate

33. In dominant–recessive inheritance, the one allele that affects the child’s characteristics is called \_\_\_\_\_.

A) dominant–recessive

B) dominant

C) recessive

D) a carrier

Answer: B

Page Ref: 46

Skill Level: Remember

Objective: 2.2 Describe various patterns of gene–gene interaction.

Topic: Genetic Foundations

Difficulty Level: Easy

34. Phil has blond hair. This means that Phil inherited a \_\_\_\_\_ pair of \_\_\_\_\_ alleles for hair color.

A) homozygous; recessive

B) heterozygous; dominant

C) homozygous; dominant

D) heterozygous; recessive

Answer: A

Page Ref: 46

Skill Level: Apply

Objective: 2.2 Describe various patterns of gene–gene interaction.

Topic: Genetic Foundations

Difficulty Level: Difficult

35. One well-known recessive disorder is \_\_\_\_\_, which affects the way the body breaks down proteins contained in many foods.

A) Cooley’s anemia

B) cystic fibrosis

C) Tay-Sachs disease

D) phenylketonuria (PKU)

Answer: D

Page Ref: 46–47

*Skill Level: Remember*

*Objective: 2.2 Describe various patterns of gene–gene interaction.*

*Topic: Genetic Foundations*

*Difficulty Level: Easy*

36. Which statement is supported by research on dominant and recessive diseases?

- A) Children who inherit the dominant allele rarely develop the disorder.
- B) Males are more likely than females to inherit recessive disorders carried on the autosomes.
- C) Only rarely are serious diseases due to dominant alleles.
- D) The recessive allele has no effect on the individual's characteristics.

Answer: C

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*Skill Level: Understand*

*Objective: 2.2 Describe various patterns of gene–gene interaction.*

*Topic: Genetic Foundations*

*Difficulty Level: Moderate*

37. Carriers of the sickle cell gene \_\_\_\_\_.

- A) often do not display symptoms until after they have passed the gene on to their children
- B) can be treated during infancy if placed on a diet that is low in phenylalanine
- C) are more resistant to malaria than are individuals with two alleles for normal red blood cells
- D) develop sickle-shaped red blood cells that cause degeneration of the nervous systems

Answer: C

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*Skill Level: Understand*

*Objective: 2.2 Describe various patterns of gene–gene interaction.*

*Topic: Genetic Foundations*

*Difficulty Level: Moderate*

38. Eric is more likely than his sister to be negatively affected by X-linked disorders because \_\_\_\_\_.

- A) males are more likely than females to inherit harmful recessive alleles
- B) the Y chromosome is much longer than the X chromosome
- C) the Y chromosome lacks many corresponding genes to override those on the X chromosome
- D) his sex chromosomes match, which makes him more susceptible to disease

Answer: C

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*Skill Level: Apply*

*Objective: 2.2 Describe various patterns of gene–gene interaction.*

*Topic: Genetic Foundations*

*Difficulty Level: Difficult*

39. In many Western countries, \_\_\_\_\_.

- A) rates of miscarriage and birth defects are higher for girls

- B) rates of learning disabilities and behavior disorders are higher for girls
- C) there has been a dramatic increase in sex-selective abortions
- D) the proportion of male births has declined in recent decades

Answer: D

Page Ref: 48

Skill Level: Understand

Objective: 2.2 Describe various patterns of gene–gene interaction.

Topic: Genetic Foundations

Difficulty Level: Moderate

40. Children with diabetes tend to have fathers, not mothers, with the illness. The pattern of inheritance is best explained by \_\_\_\_\_.

- A) incomplete dominance
- B) X-linked inheritance
- C) genomic imprinting
- D) genetic mutation

Answer: C

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Skill Level: Understand

Objective: 2.2 Describe various patterns of gene–gene interaction.

Topic: Genetic Foundations

Difficulty Level: Moderate

41. In which disease or disorder does genomic imprinting operate on the sex chromosomes?

- A) fragile X syndrome
- B) Huntington disease
- C) sickle cell anemia
- D) Marfan syndrome

Answer: A

Page Ref: 49

Skill Level: Understand

Objective: 2.2 Describe various patterns of gene–gene interaction.

Topic: Genetic Foundations

Difficulty Level: Moderate

42. The majority of individuals with fragile X syndrome suffer from \_\_\_\_\_.

- A) childhood cancer
- B) high anxiety
- C) severe obesity
- D) diabetes

Answer: B

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*Skill Level: Remember*

*Objective: 2.2 Describe various patterns of gene–gene interaction.*

*Topic: Genetic Foundations*

*Difficulty Level: Easy*

43. Studies of mutation demonstrate that \_\_\_\_\_.

- A) some mutations occur spontaneously, simply by chance
- B) mutations are never desirable
- C) females are more susceptible than males to harmful mutations
- D) most mutations cause only a temporary change in a segment of DNA

Answer: A

Page Ref: 49

*Skill Level: Understand*

*Objective: 2.2 Describe various patterns of gene–gene interaction.*

*Topic: Genetic Foundations*

*Difficulty Level: Moderate*

44. In \_\_\_\_\_, normal body cells mutate, an event that can occur at any time of life.

- A) somatic mutation
- B) germline mutation
- C) polygenic inheritance
- D) genomic imprinting

Answer: A

Page Ref: 49

*Skill Level: Remember*

*Objective: 2.2 Describe various patterns of gene–gene interaction.*

*Topic: Genetic Foundations*

*Difficulty Level: Easy*

45. Terrace is 6'2" and weighs 165 pounds, while his brother, Jayquan, is 5'9" and weighs 210 pounds. These traits are due to \_\_\_\_\_.

- A) dominant–recessive inheritance
- B) polygenic inheritance
- C) somatic mutation
- D) germline mutation

Answer: B

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*Skill Level: Apply*

*Objective: 2.2 Describe various patterns of gene–gene interaction.*

*Topic: Genetic Foundations*

*Difficulty Level: Moderate*

46. Most chromosomal defects result from \_\_\_\_\_.

- A) X-linked disorders
- B) mistakes occurring during mitosis
- C) mistakes occurring during meiosis
- D) recessive disorders

Answer: C

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Skill Level: Understand

Objective: 2.3 Describe major chromosomal abnormalities, and explain how they occur.

Topic: Genetic Foundations

Difficulty Level: Moderate

47. There was a failure of the twenty-first pair of chromosomes to separate during meiosis, so Aziz received three of these chromosomes rather than the normal two. Aziz has \_\_\_\_\_ syndrome.

- A) XYY
- B) Klinefelter
- C) Turner
- D) Down

Answer: D

Page Ref: 50

Skill Level: Apply

Objective: 2.3 Describe major chromosomal abnormalities, and explain how they occur.

Topic: Genetic Foundations

Difficulty Level: Difficult

48. About 70 percent of individuals with Down syndrome who live past age 40 show symptoms of \_\_\_\_\_ disease.

- A) Tay-Sachs
- B) Huntington's
- C) Alzheimer's
- D) kidney

Answer: C

Page Ref: 50

Skill Level: Remember

Objective: 2.3 Describe major chromosomal abnormalities, and explain how they occur.

Topic: Genetic Foundations

Difficulty Level: Easy

49. Which woman is at the greatest risk of bearing a baby with Down syndrome?

- A) Gemma, age 15, who lives in a rural community
- B) Melina, age 24, who lives with a smoker
- C) Ursula, age 33, who was exposed to electromagnetic waves
- D) Kay, age 42, who lives in an urban area

Answer: D

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Skill Level: Apply

Objective: 2.3 Describe major chromosomal abnormalities, and explain how they occur.

Topic: Genetic Foundations

Difficulty Level: Difficult

50. Research on sex chromosome disorders shows that \_\_\_\_\_.

- A) males with XYY syndrome are more aggressive and antisocial than XY males
- B) verbal difficulties are common among females who are missing an X chromosome
- C) females who are missing an X chromosome often have trouble with spatial relationships
- D) most children with these disorders suffer from intellectual disability

Answer: C

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Skill Level: Understand

Objective: 2.3 Describe major chromosomal abnormalities, and explain how they occur.

Topic: Genetic Foundations

Difficulty Level: Moderate

51. Manny inherited an extra X chromosome. If he is like many boys with Klinefelter syndrome, Manny will have difficulty \_\_\_\_\_.

- A) reading
- B) drawing pictures
- C) following travel directions
- D) noticing changes in facial expressions

Answer: A

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Skill Level: Apply

Objective: 2.3 Describe major chromosomal abnormalities, and explain how they occur.

Topic: Genetic Foundations

Difficulty Level: Difficult

52. Mr. and Mrs. Hopewell are concerned because they have been trying without success to have a baby for over a year. Which procedure would you recommend to them?

- A) gene therapy
- B) genetic counseling
- C) genetic engineering
- D) fetal medicine

Answer: B

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Skill Level: Apply

Objective: 2.4 What procedures can assist prospective parents in having healthy children?

Topic: Reproductive Choices

*Difficulty Level: Moderate*

53. If a family history of intellectual disabilities, psychological disorders, physical defects, or inherited diseases exists, a genetic counselor prepares a \_\_\_\_\_, which identifies affected relatives in a couple's family tree.

- A) pedigree
- B) carrier detector
- C) prenatal diagnosis
- D) genetic diagnosis

Answer: A

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Skill Level: Remember

Objective: 2.4 What procedures can assist prospective parents in having healthy children?

Topic: Reproductive Choices

Difficulty Level: Easy

54. Donor insemination \_\_\_\_\_.

- A) is commonly used to overcome female reproductive difficulties
- B) involves giving a woman hormones that stimulate the ripening of several ova
- C) permits women without a male partner to become pregnant
- D) is used to treat women whose fallopian tubes are permanently damaged

Answer: C

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Skill Level: Understand

Objective: 2.4 What procedures can assist prospective parents in having healthy children?

Topic: Reproductive Choices

Difficulty Level: Moderate

55. Usually, in vitro fertilization \_\_\_\_\_.

- A) is used to overcome male reproductive difficulties
- B) poses less risk than natural conception to infant survival
- C) is used to treat women whose fallopian tubes are permanently damaged
- D) involves wealthy contractors for infants

Answer: C

Page Ref: 52 Box: SOCIAL ISSUES: HEALTH: The Pros and Cons of Reproductive Technologies

Skill Level: Understand

Objective: 2.4 What procedures can assist prospective parents in having healthy children?

Topic: Reproductive Choices

Difficulty Level: Moderate

56. Which statement about children conceived through reproductive technologies is true?

- A) Children who are not informed of their gamete-donor origins experience more positive maternal interaction.



- B) Caregiving is somewhat warmer for young children conceived through donor insemination or in vitro fertilization.
- C) Most parents who have used the reproductive technology procedures tell their children how they were conceived.
- D) Adolescents conceived through insemination tend to be less well-adjusted than naturally conceived children.

Answer: B

Page Ref: 52 Box: *SOCIAL ISSUES: HEALTH: The Pros and Cons of Reproductive Technologies*

Skill Level: Understand

Objective: 2.4 What procedures can assist prospective parents in having healthy children?

Topic: Reproductive Choices

Difficulty Level: Moderate

57. Margot, 58, and Todd, 62, have decided to use donor ova in combination with in vitro fertilization to help Margot become pregnant. Which statement is true?

- A) Most children conceived through in vitro fertilization are less well-adjusted than naturally conceived children.
- B) Among in vitro babies, the rate of low birth weight is nearly five times lower than in the general population.
- C) Due to the biological effects of in vitro techniques and their older age, Margot and Todd have a lower risk of miscarriage.
- D) Based on life expectancy data, there is a moderate chance that Margot or Todd will die before their child enters college.

Answer: D

Page Ref: 52–53 Box: *SOCIAL ISSUES: HEALTH: The Pros and Cons of Reproductive Technologies*

Skill Level: Understand

Objective: 2.4 What procedures can assist prospective parents in having healthy children?

Topic: Reproductive Choices

Difficulty Level: Moderate

58. Hoda, an economically disadvantaged mother of four, is considering becoming a surrogate. What is one realistic concern that Hoda might have about surrogate motherhood?

- A) About 50 percent of surrogate procedures result in multiple births.
- B) The success rate of surrogacy is only about 25 percent.
- C) Knowledge that their mother would give away a baby might cause insecurities in Hoda's children.
- D) Most U.S. states allow only "altruistic" surrogacy, in which the surrogate has no financial gain.

Answer: C

Page Ref: 53 Box: *SOCIAL ISSUES: HEALTH: The Pros and Cons of Reproductive Technologies*

Skill Level: Apply

Objective: 2.4 What procedures can assist prospective parents in having healthy children?

Topic: Reproductive Choices

Difficulty Level: Difficult

59. To detect developmental problems before birth, doctors use \_\_\_\_\_.

- A) prenatal diagnostic methods
- B) genomic imprinting
- C) gene therapy
- D) carrier detectors

Answer: A

Page Ref: 53

Skill Level: Remember

Objective: 2.4 What procedures can assist prospective parents in having healthy children?

Topic: Reproductive Choices

Difficulty Level: Easy

60. Except for \_\_\_\_\_, prenatal diagnosis should not be used routinely because of injury risk to the developing organism.

- A) amniocentesis
- B) fetoscopy
- C) chorionic villus sampling
- D) maternal blood analysis

Answer: D

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Skill Level: Understand

Objective: 2.4 What procedures can assist prospective parents in having healthy children?

Topic: Reproductive Choices

Difficulty Level: Moderate

61. \_\_\_\_\_ is the most widely used prenatal diagnostic method.

- A) Amniocentesis
- B) Chorionic villus sampling
- C) Ultrafast magnetic resonance imaging
- D) Fetoscopy

Answer: A

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Skill Level: Remember

Objective: 2.4 What procedures can assist prospective parents in having healthy children?

Topic: Reproductive Choices

Difficulty Level: Easy

62. Which prenatal diagnostic method is used after in vitro fertilization but before implantation?

- A) chorionic villus sampling
- B) ultrafast magnetic resonance imaging
- C) fetal surgery
- D) preimplantation genetic diagnosis

Answer: D

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Skill Level: Understand

Objective: 2.4 What procedures can assist prospective parents in having healthy children?

Topic: Reproductive Choices

Difficulty Level: Moderate

63. Dr. Shaw modifies gene-specified proteins involved in biological aging and disease. This approach is known as \_\_\_\_\_.

- A) fetoscopy
- B) amniocentesis
- C) proteomics
- D) genetic counseling

Answer: C

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Skill Level: Apply

Objective: 2.4 What procedures can assist prospective parents in having healthy children?

Topic: Reproductive Choices

Difficulty Level: Moderate

64. Adopted children and adolescents tend to \_\_\_\_\_.

- A) have trouble developing feelings of trust and affection toward their adoptive parents
- B) fare better if they are adopted in their birth country after infancy and toddlerhood
- C) develop less favorably than institutionalized agemates who remain in their birth country
- D) have more learning and emotional difficulties than other children and adolescents

Answer: D

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Skill Level: Understand

Objective: 2.4 What procedures can assist prospective parents in having healthy children?

Topic: Reproductive Choices

Difficulty Level: Moderate

65. Most adopted children \_\_\_\_\_.

- A) fare well, despite the risks
- B) have persistent social problems
- C) are less intelligent than their biological relatives
- D) have persistent cognitive problems

Answer: A

Page Ref: 56

Skill Level: Understand

Objective: 2.4 What procedures can assist prospective parents in having healthy children?

Topic: Reproductive Choices

Difficulty Level: Moderate

66. When Erin and Brooke willingly comply, their parents are likely to be warm and gentle in the future. This is an example of a(n) \_\_\_\_\_ influence between parents and their children.

- A) direct
- B) coparenting
- C) maladaptive
- D) indirect

Answer: A

Page Ref: 57

Skill Level: Apply

Objective: 2.5 Describe family functioning from the perspective of ecological systems theory, along with aspects of the environment that support family well-being and development.

Topic: Environmental Contexts for Development

Difficulty Level: Moderate

67. Amelia and Andrew praise and stimulate their children, and they mutually support each other's parenting behaviors. Amelia and Andrew engage in effective \_\_\_\_\_.

- A) induction
- B) permissive parenting
- C) coparenting
- D) niche-picking

Answer: C

Page Ref: 57

Skill Level: Apply

Objective: 2.5 Describe family functioning from the perspective of ecological systems theory, along with aspects of the environment that support family well-being and development.

Topic: Environmental Contexts for Development

Difficulty Level: Moderate

68. Grandparents are an example of \_\_\_\_\_ that can promote children's development.

- A) unidirectional influences
- B) third parties
- C) niche-picking
- D) a macrosystem

Answer: B

Page Ref: 57

Skill Level: Understand

Objective: 2.5 Describe family functioning from the perspective of ecological systems theory, along with aspects of the environment that support family well-being and development.

Topic: Environmental Contexts for Development

Difficulty Level: Easy

69. Young people today are more likely to have \_\_\_\_\_ than at any time in history.

- A) older relatives
- B) married parents
- C) living siblings
- D) unemployed parents

Answer: A

Page Ref: 58

Skill Level: Understand

Objective: 2.5 Describe family functioning from the perspective of ecological systems theory, along with aspects of the environment that support family well-being and development.

Topic: Environmental Contexts for Development

Difficulty Level: Moderate

70. People who work in skilled and semiskilled manual occupations tend to \_\_\_\_\_ than people in professional and technical occupations.

- A) marry later
- B) have more children
- C) talk to their children more
- D) verbally praise their children more

Answer: B

Page Ref: 58

Skill Level: Understand

Objective: 2.5 Describe family functioning from the perspective of ecological systems theory, along with aspects of the environment that support family well-being and development.

Topic: Environmental Contexts for Development

Difficulty Level: Moderate

71. When asked about personal qualities they desire for their children, higher-SES parents are likely to emphasize \_\_\_\_\_.

- A) obedience
- B) politeness
- C) happiness
- D) cleanliness

Answer: C

Page Ref: 58

Skill Level: Understand

Objective: 2.5 Describe family functioning from the perspective of ecological systems theory, along with aspects of the environment that support family well-being and development.

Topic: Environmental Contexts for Development

Difficulty Level: Moderate

72. Of all Western nations, \_\_\_\_\_ has the highest percentage of extremely poor children.

- A) the United States
- B) Canada

- C) Germany
- D) France

Answer: A

Page Ref: 59

Skill Level: Remember

Objective: 2.5 Describe family functioning from the perspective of ecological systems theory, along with aspects of the environment that support family well-being and development.

Topic: Environmental Contexts for Development

Difficulty Level: Easy

73. Nearly 10 percent of \_\_\_\_\_ children live in deep poverty.

- A) Canadian
- B) U.S.
- C) Norwegian
- D) Swedish

Answer: B

Page Ref: 59

Skill Level: Remember

Objective: 2.5 Describe family functioning from the perspective of ecological systems theory, along with aspects of the environment that support family well-being and development.

Topic: Environmental Contexts for Development

Difficulty Level: Easy

74. Most homeless families consist of \_\_\_\_\_.

- A) childless couples
- B) single fathers with adolescent children
- C) single mothers with adolescent children
- D) women with children under age 5

Answer: D

Page Ref: 59

Skill Level: Remember

Objective: 2.5 Describe family functioning from the perspective of ecological systems theory, along with aspects of the environment that support family well-being and development.

Topic: Environmental Contexts for Development

Difficulty Level: Easy

75. In several studies, affluent teenagers were \_\_\_\_\_ likely than youths in general to \_\_\_\_\_.

- A) less; engage in alcohol and drug use
- B) more; report high levels of anxiety and depression
- C) less; self-medicate
- D) more; have physically and emotionally available parents

Answer: B

*Page Ref: 60*

*Skill Level: Understand*

*Objective: 2.5 Describe family functioning from the perspective of ecological systems theory, along with aspects of the environment that support family well-being and development.*

*Topic: Environmental Contexts for Development*

*Difficulty Level: Moderate*

76. For both affluent and low-SES youths, what simple routine is associated with a reduction in adjustment difficulties?

- A) eating dinner with parents
- B) early bedtimes
- C) completing homework before dinner
- D) weekly family night

Answer: A

*Page Ref: 60*

*Skill Level: Understand*

*Objective: 2.5 Describe family functioning from the perspective of ecological systems theory, along with aspects of the environment that support family well-being and development.*

*Topic: Environmental Contexts for Development*

*Difficulty Level: Easy*

77. In an experimental study of neighborhood mobility, compared with their peers who remained in poverty-stricken areas, children and youths who moved into low-poverty neighborhoods and remained there for several years showed \_\_\_\_\_.

- A) more mental health issues
- B) better school achievement
- C) more physical health issues
- D) more social problems

Answer: B

*Page Ref: 60–61*

*Skill Level: Remember*

*Objective: 2.5 Describe family functioning from the perspective of ecological systems theory, along with aspects of the environment that support family well-being and development.*

*Topic: Environmental Contexts for Development*

*Difficulty Level: Easy*

78. Neighborhood resources \_\_\_\_\_.

- A) play little or no role in children's development
- B) have a greater impact on adults than on children and youths
- C) are not important in late adulthood because most elders are homebound
- D) have a greater impact on economically disadvantaged than on well-to-do young people

Answer: D

*Page Ref: 61*

*Skill Level: Understand*

*Objective: 2.5 Describe family functioning from the perspective of ecological systems theory, along with aspects of the environment that support family well-being and development.*

*Topic: Environmental Contexts for Development*

*Difficulty Level: Moderate*

79. Longitudinal follow-up research on the Better Beginnings, Better Futures Project of Ontario, Canada, revealed a(n) \_\_\_\_\_.

- A) reduction in children's social adjustment
- B) increase in adolescent delinquency
- C) improved sense of community connection
- D) reduction in children's academic achievement

Answer: C

Page Ref: 61

*Skill Level: Remember*

*Objective: 2.5 Describe family functioning from the perspective of ecological systems theory, along with aspects of the environment that support family well-being and development.*

*Topic: Environmental Contexts for Development*

*Difficulty Level: Easy*

80. Well-educated adults tend to have \_\_\_\_\_ than adults with less education.

- A) smaller social networks
- B) more social support
- C) less life satisfaction
- D) less school contact

Answer: B

Page Ref: 62

*Skill Level: Understand*

*Objective: 2.5 Describe family functioning from the perspective of ecological systems theory, along with aspects of the environment that support family well-being and development.*

*Topic: Environmental Contexts for Development*

*Difficulty Level: Moderate*

81. Students whose parents are involved in school activities and attend parent-teacher conferences \_\_\_\_\_.

- A) show better academic achievement
- B) often feel uncomfortable about coming to school
- C) are more likely to attend underfunded schools
- D) are less likely to graduate from high school

Answer: A

Page Ref: 62

*Skill Level: Understand*



*Objective: 2.5 Describe family functioning from the perspective of ecological systems theory, along with aspects of the environment that support family well-being and development.*

*Topic: Environmental Contexts for Development*

*Difficulty Level: Moderate*

82. One reason that the American people have been reluctant to accept the idea of publicly supported child care is that \_\_\_\_\_.

- A) few mothers of very young children work outside the home
- B) it is widely believed that child care is harmful to young children
- C) most grandparents provide regular child care
- D) American values emphasize independence and self-reliance

Answer: D

Page Ref: 62

Skill Level: Understand

*Objective: 2.5 Describe family functioning from the perspective of ecological systems theory, along with aspects of the environment that support family well-being and development.*

*Topic: Environmental Contexts for Development*

*Difficulty Level: Difficult*

83. In \_\_\_\_\_, people hold different beliefs and customs from those held by the larger culture.

- A) microsystems
- B) subcultures
- C) macrosystems
- D) collectivist societies

Answer: B

Page Ref: 62

Skill Level: Remember

*Objective: 2.5 Describe family functioning from the perspective of ecological systems theory, along with aspects of the environment that support family well-being and development.*

*Topic: Environmental Contexts for Development*

*Difficulty Level: Easy*

84. Heronomo lives with his father, his sister, and his paternal grandparents. Heronomo lives in a(n) \_\_\_\_\_.

- A) subculture
- B) high-SES neighborhood
- C) nuclear-family household
- D) extended-family household

Answer: D

Page Ref: 62

Skill Level: Apply

*Objective: 2.5 Describe family functioning from the perspective of ecological systems theory, along with aspects of the environment that support family well-being and development.*

*Topic: Environmental Contexts for Development*

*Difficulty Level: Moderate*

85. Among African Americans, living within an extended family tends to produce \_\_\_\_\_.

- A) higher levels of divorce and teenage pregnancy
- B) improved child rearing and reduced stress
- C) more children with insecure attachments
- D) greater unemployment

Answer: B

*Page Ref: 63 Box: CULTURAL INFLUENCES: The African-American Extended Family*

*Skill Level: Understand*

*Objective: 2.5 Describe family functioning from the perspective of ecological systems theory, along with aspects of the environment that support family well-being and development.*

*Topic: Environmental Contexts for Development*

*Difficulty Level: Moderate*

86. Compared with nuclear-family households, extended-family arrangements \_\_\_\_\_.

- A) decrease family bonds
- B) place less emphasis on moral and religious values
- C) produce more adolescents with antisocial behavior
- D) place more emphasis on cooperation and on moral and religious values

Answer: D

*Page Ref: 63 Box: CULTURAL INFLUENCES: The African-American Extended Family*

*Skill Level: Understand*

*Objective: 2.5 Describe family functioning from the perspective of ecological systems theory, along with aspects of the environment that support family well-being and development.*

*Topic: Environmental Contexts for Development*

*Difficulty Level: Moderate*

87. In cultures that emphasize collectivism, people value \_\_\_\_\_.

- A) independence
- B) personal achievement
- C) collaborative endeavors
- D) choice in relationships

Answer: C

*Page Ref: 63*

*Skill Level: Understand*

*Objective: 2.5 Describe family functioning from the perspective of ecological systems theory, along with aspects of the environment that support family well-being and development.*

*Topic: Environmental Contexts for Development*

*Difficulty Level: Moderate*

88. The United States is more \_\_\_\_\_ than most Western European countries, which place greater weight on \_\_\_\_\_.

- A) collectivistic; individualism
- B) individualistic; independence
- C) collectivistic; interdependence
- D) individualistic; collectivism

Answer: D

Page Ref: 63

Skill Level: Understand

Objective: 2.5 Describe family functioning from the perspective of ecological systems theory, along with aspects of the environment that support family well-being and development.

Topic: Environmental Contexts for Development

Difficulty Level: Moderate

89. When reports indicate that many children are not achieving well in school, the federal and state governments might grant more tax money to school districts. This is an example of a(n) \_\_\_\_\_ policy.

- A) individualistic
- B) collectivist
- C) public
- D) socialistic

Answer: C

Page Ref: 64

Skill Level: Apply

Objective: 2.5 Describe family functioning from the perspective of ecological systems theory, along with aspects of the environment that support family well-being and development.

Topic: Environmental Contexts for Development

Difficulty Level: Difficult

90. In the United States, public policies safeguarding \_\_\_\_\_ lag behind policies for \_\_\_\_\_.

- A) older adults; children and youths
- B) children and youths; older adults
- C) older adults; extended families
- D) school-age children; preschool children

Answer: B

Page Ref: 64

Skill Level: Remember

Objective: 2.5 Describe family functioning from the perspective of ecological systems theory, along with aspects of the environment that support family well-being and development.

Topic: Environmental Contexts for Development

Difficulty Level: Easy

91. \_\_\_\_\_ does not rank well on any key measure of children's health and well-being.

- A) Sweden
- B) Spain
- C) Australia
- D) The United States

Answer: D

Page Ref: 64

Skill Level: Remember

Objective: 2.5 Describe family functioning from the perspective of ecological systems theory, along with aspects of the environment that support family well-being and development.

Topic: Environmental Contexts for Development

Difficulty Level: Moderate

92. The United States \_\_\_\_\_.

- A) has a higher infant death rate than Canada
- B) provides national standards and funding for child care
- C) spends more public funds on education than Sweden
- D) spends more public funds on early childhood education than Germany

Answer: A

Page Ref: 64

Skill Level: Remember

Objective: 2.5 Describe family functioning from the perspective of ecological systems theory, along with aspects of the environment that support family well-being and development.

Topic: Environmental Contexts for Development

Difficulty Level: Moderate

93. The Affordable Care Act \_\_\_\_\_.

- A) mandates affordable health insurance for low-income adults in all states
- B) extends government-supported health insurance to all children in low-income families
- C) creates a universal, publicly funded health care system for all American families
- D) creates national standards and public funding for child care in the United States

Answer: B

Page Ref: 64

Skill Level: Understand

Objective: 2.5 Describe family functioning from the perspective of ecological systems theory, along with aspects of the environment that support family well-being and development.

Topic: Environmental Contexts for Development

Difficulty Level: Moderate

94. Which statement about child care in the United States is true?

- A) Much of it is mediocre to poor in quality.
- B) Affordable care is guaranteed by law.
- C) National standards ensure quality care.
- D) Publicly funded child care is easily available.

Answer: A

Page Ref: 64

Skill Level: Understand

Objective: 2.5 Describe family functioning from the perspective of ecological systems theory, along with aspects of the environment that support family well-being and development.

Topic: Environmental Contexts for Development

Difficulty Level: Moderate

95. One reason that public policies safeguarding children are slow to emerge in the United States is because \_\_\_\_\_.

- A) such government policies have failed in other Western countries
- B) social programs are rarely cost-effective
- C) children cannot vote or speak out to protect their own interests
- D) the United States already ranks at the top on key measures of children's health and well-being

Answer: C

Page Ref: 64

Skill Level: Understand

Objective: 2.5 Describe family functioning from the perspective of ecological systems theory, along with aspects of the environment that support family well-being and development.

Topic: Environmental Contexts for Development

Difficulty Level: Difficult

96. Medicare \_\_\_\_\_.

- A) extends government-supported health insurance to all children in low-income families
- B) pays partial health-care costs of older adults, covering about two-thirds of their health expenditures
- C) covers the income needs of retired citizens who contributed to society through prior employment
- D) and Social Security ensure that all older Americans live above the poverty line

Answer: B

Page Ref: 65

Skill Level: Understand

Objective: 2.5 Describe family functioning from the perspective of ecological systems theory, along with aspects of the environment that support family well-being and development.

Topic: Environmental Contexts for Development

Difficulty Level: Moderate

97. The minimum income guaranteed to Americans age 65 and older from Social Security is \_\_\_\_\_.

- A) more generous than those in most other Western nations
- B) increasing substantially every year
- C) below the poverty line
- D) about 200 percent of the poverty line

Answer: C

Page Ref: 65

*Skill Level: Understand*

*Objective: 2.5 Describe family functioning from the perspective of ecological systems theory, along with aspects of the environment that support family well-being and development.*

*Topic: Environmental Contexts for Development*

*Difficulty Level: Moderate*

98. Senior citizens in the United States today are \_\_\_\_\_.

- A) less likely than seniors in other Western nations to be poverty stricken
- B) more likely than other age groups to be among the “near poor”
- C) less likely than children to attract the support of politicians
- D) less likely to be healthy and independent than in the past

Answer: B

Page Ref: 65

*Skill Level: Understand*

*Objective: 2.5 Describe family functioning from the perspective of ecological systems theory, along with aspects of the environment that support family well-being and development.*

*Topic: Environmental Contexts for Development*

*Difficulty Level: Moderate*

99. The Children’s Defense Fund \_\_\_\_\_.

- A) provides free legal services to low-income families of children with disabilities
- B) has a large and energetic lobbying staff that works for increased benefits of all kinds for older adults
- C) is an influential special interest group devoted to the well-being of children and older adults in poverty
- D) engages in public education and partners with other organizations to improve policies for children

Answer: D

Page Ref: 66

*Skill Level: Remember*

*Objective: 2.5 Describe family functioning from the perspective of ecological systems theory, along with aspects of the environment that support family well-being and development.*

*Topic: Environmental Contexts for Development*

*Difficulty Level: Easy*

100. Behavioral genetics is a(n) \_\_\_\_\_.

- A) medical procedure that permits detection of developmental problems before birth
- B) ambitious international research program aimed at deciphering genomes
- C) field devoted to uncovering the contributions of nature and nurture to human diversity
- D) biochemical process triggered by certain experiences that alter gene expression

Answer: C

Page Ref: 66

*Skill Level: Remember*

*Objective: 2.6 Explain the various ways heredity and environment may combine to influence complex traits.*

*Topic: Understanding the Relationship Between Heredity and Environment*

*Difficulty Level: Easy*

101. A growing number of researchers regard the question of how much heredity and environment each contribute to differences among people as \_\_\_\_\_.

- A) unanswerable
- B) answered mainly by DNA
- C) unimportant
- D) answered easily with kinship studies

Answer: A

*Page Ref: 66*

*Skill Level: Understand*

*Objective: 2.6 Explain the various ways heredity and environment may combine to influence complex traits.*

*Topic: Understanding the Relationship Between Heredity and Environment*

*Difficulty Level: Moderate*

102. Dr. Rudy wants to compare the characteristics of family members. What kind of research method would you recommend that Dr. Rudy use?

- A) a kinship study
- B) a case study
- C) a structured observation
- D) an experimental design

Answer: A

*Page Ref: 67*

*Skill Level: Apply*

*Objective: 2.6 Explain the various ways heredity and environment may combine to influence complex traits.*

*Topic: Understanding the Relationship Between Heredity and Environment*

*Difficulty Level: Moderate*

103. Currently, most kinship findings support a \_\_\_\_\_ role for heredity in \_\_\_\_\_.

- A) strong; intelligence
- B) moderate; intelligence
- C) strong; anxiety
- D) weak; personality

Answer: B

*Page Ref: 67*

*Skill Level: Understand*

*Objective: 2.6 Explain the various ways heredity and environment may combine to influence complex traits.*

*Topic: Understanding the Relationship Between Heredity and Environment*

*Difficulty Level: Moderate*

104. Twin studies of schizophrenia, bipolar disorder, and autism \_\_\_\_\_.

- A) fail to demonstrate a strong genetic link
- B) yield unreliable heritabilities, ranging from .20 to .75
- C) generally yield high heritabilities, above .70
- D) consistently yield low heritabilities, below .30

Answer: C

Page Ref: 67

Skill Level: Remember

Objective: 2.6 Explain the various ways heredity and environment may combine to influence complex traits.

Topic: Understanding the Relationship Between Heredity and Environment

Difficulty Level: Moderate

105. Heritabilities for antisocial behavior and major depression \_\_\_\_\_.

- A) fail to demonstrate a genetic link
- B) range from .25 to .75
- C) are consistently above .70
- D) are in the .30s and .40s

Answer: D

Page Ref: 67

Skill Level: Remember

Objective: 2.6 Explain the various ways heredity and environment may combine to influence complex traits.

Topic: Understanding the Relationship Between Heredity and Environment

Difficulty Level: Moderate

106. Heritability estimates are \_\_\_\_\_.

- A) likely to exaggerate the role of the environment
- B) difficult to misapply
- C) not useful for studying complex traits, such as intelligence and personality
- D) likely to exaggerate the role of heredity

Answer: D

Page Ref: 67

Skill Level: Understand

Objective: 2.6 Explain the various ways heredity and environment may combine to influence complex traits.

Topic: Understanding the Relationship Between Heredity and Environment

Difficulty Level: Moderate

107. The concept of \_\_\_\_\_ means that because of their genetic makeup, individuals differ in their responsiveness to qualities of the environment.

- A) gene–environment interaction
- B) niche-picking



- C) passive correlation
- D) evocative correlation

Answer: A

Page Ref: 68

Skill Level: Remember

Objective: 2.6 Explain the various ways heredity and environment may combine to influence complex traits.

Topic: Understanding the Relationship Between Heredity and Environment

Difficulty Level: Easy

108. According to the concept of gene–environment correlation, \_\_\_\_\_.

- A) people respond similarly to the same qualities of the environment
- B) heredity restricts the development of some characteristics to one outcome
- C) our genes influence the environments to which we are exposed
- D) the environment can alter gene expression without changing the DNA sequence

Answer: C

Page Ref: 68

Skill Level: Understand

Objective: 2.6 Explain the various ways heredity and environment may combine to influence complex traits.

Topic: Understanding the Relationship Between Heredity and Environment

Difficulty Level: Moderate

109. The child has no control over \_\_\_\_\_ correlation.

- A) passive
- B) evocative
- C) active
- D) gene–environment

Answer: A

Page Ref: 68

Skill Level: Understand

Objective: 2.6 Explain the various ways heredity and environment may combine to influence complex traits.

Topic: Understanding the Relationship Between Heredity and Environment

Difficulty Level: Moderate

110. Bart and Nadia are gymnasts. Their 4-year-old son, Dylan, participates in children’s gymnastics. This is an example of \_\_\_\_\_.

- A) methylation
- B) evocative correlation
- C) active correlation
- D) passive correlation

Answer: D

Page Ref: 68–69

Skill Level: Apply

Objective: 2.6 Explain the various ways heredity and environment may combine to influence complex traits.

Topic: Understanding the Relationship Between Heredity and Environment

Difficulty Level: Moderate

111. A gene–environment correlation is evocative when \_\_\_\_\_.

- A) parents provide environments influenced by their own heredity
- B) children extend their experiences beyond the immediate family
- C) children actively seek environments that fit with their genetic tendencies
- D) a child's heredity influences responses that strengthen the child's original style

Answer: D

Page Ref: 68–69

Skill Level: Understand

Objective: 2.6 Explain the various ways heredity and environment may combine to influence complex traits.

Topic: Understanding the Relationship Between Heredity and Environment

Difficulty Level: Moderate

112. Angela, a cooperative and attentive child, receives more patient and sensitive interactions from her parents than Carlos, who is inattentive and hyperactive. This is an example of a(n) \_\_\_\_\_ gene–environment correlation.

- A) active
- B) evocative
- C) dynamic
- D) passive

Answer: B

Page Ref: 68–69

Skill Level: Apply

Objective: 2.6 Explain the various ways heredity and environment may combine to influence complex traits.

Topic: Understanding the Relationship Between Heredity and Environment

Difficulty Level: Moderate

113. Identical twins evoke \_\_\_\_\_.

- A) only moderately similar parental treatment in negativity
- B) only moderately similar parental treatment in warmth
- C) similar maternal treatment in warmth and negativity because of their identical heredity
- D) varied maternal treatment because mothers respond to each child's unique genetic makeup

Answer: C

Page Ref: 69

*Skill Level: Understand*

*Objective: 2.6 Explain the various ways heredity and environment may combine to influence complex traits.*

*Topic: Understanding the Relationship Between Heredity and Environment*

*Difficulty Level: Moderate*

114. \_\_\_\_\_ gene–environment correlation becomes common at older ages.

- A) Passive
- B) Active
- C) Evocative
- D) Stagnant

Answer: B

Page Ref: 69

*Skill Level: Understand*

*Objective: 2.6 Explain the various ways heredity and environment may combine to influence complex traits.*

*Topic: Understanding the Relationship Between Heredity and Environment*

*Difficulty Level: Easy*

115. Anthony, a well-coordinated and muscular boy, decides to play high school football. This is an example of \_\_\_\_\_ gene–environment correlation.

- A) active
- B) passive
- C) dynamic
- D) evocative

Answer: A

Page Ref: 69

*Skill Level: Apply*

*Objective: 2.6 Explain the various ways heredity and environment may combine to influence complex traits.*

*Topic: Understanding the Relationship Between Heredity and Environment*

*Difficulty Level: Moderate*

116. Emma, an intellectually curious child, is a familiar patron at her local library. This is an example of \_\_\_\_\_.

- A) passive correlation
- B) niche-picking
- C) evocative correlation
- D) methylation

Answer: B

Page Ref: 69

*Skill Level: Apply*

*Objective: 2.6 Explain the various ways heredity and environment may combine to influence complex traits.*

*Topic: Understanding the Relationship Between Heredity and Environment*

*Difficulty Level: Moderate*

117. Which age group is likely to do more niche-picking?

- A) adolescents
- B) preschoolers
- C) infants
- D) toddlers

Answer: A

Page Ref: 69

Skill Level: Understand

*Objective: 2.6 Explain the various ways heredity and environment may combine to influence complex traits.*

*Topic: Understanding the Relationship Between Heredity and Environment*

*Difficulty Level: Moderate*

118. \_\_\_\_\_ helps explain why pairs of identical twins reared apart during childhood and later reunited may find that they have similar hobbies, food preferences, and vocations.

- A) Passive correlation
- B) Methylation
- C) Evocative correlation
- D) Niche-picking

Answer: D

Page Ref: 69

Skill Level: Understand

*Objective: 2.6 Explain the various ways heredity and environment may combine to influence complex traits.*

*Topic: Understanding the Relationship Between Heredity and Environment*

*Difficulty Level: Moderate*

119. Parents and other caregivers \_\_\_\_\_.

- A) cannot modify their children's expression of hereditary tendencies, regardless of the experiences they provide
- B) can uncouple unfavorable gene–environment correlations by providing children with positive experiences
- C) can do little to alter genetic tendencies, which cause children to receive, evoke, or seek certain experiences
- D) cannot protect aggressive children from a spiraling, antisocial course of development

Answer: B

Page Ref: 70

Skill Level: Understand

*Objective: 2.6 Explain the various ways heredity and environment may combine to influence complex traits.*

*Topic: Understanding the Relationship Between Heredity and Environment*

*Difficulty Level: Difficult*

120. Which concept places the most emphasis on bidirectional exchanges between heredity and the environment?

- A) gene–environment interaction
- B) gene–environment correlation
- C) epigenesis
- D) niche-picking

Answer: C

Page Ref: 70

Skill Level: Understand

*Objective: 2.6 Explain the various ways heredity and environment may combine to influence complex traits.*

*Topic: Understanding the Relationship Between Heredity and Environment*

*Difficulty Level: Moderate*

121. \_\_\_\_\_ help explain why identical twins, though precisely the same in DNA sequencing, sometimes display strikingly different phenotypes with age.

- A) Heredity estimates
- B) Passive correlations
- C) Evocative correlations
- D) Methylation levels

Answer: D

Page Ref: 70

Skill Level: Understand

*Objective: 2.6 Explain the various ways heredity and environment may combine to influence complex traits.*

*Topic: Understanding the Relationship Between Heredity and Environment*

*Difficulty Level: Moderate*

122. Environmental modification of gene expression \_\_\_\_\_.

- A) may be possible in the future
- B) cannot occur until after puberty
- C) can occur at any age, even prenatally
- D) happens in other mammals, but not humans

Answer: C

Page Ref: 70

Skill Level: Understand

*Objective: 2.6 Explain the various ways heredity and environment may combine to influence complex traits.*

*Topic: Understanding the Relationship Between Heredity and Environment*

*Difficulty Level: Moderate*

123. Parental post-traumatic stress disorder (PTSD) is \_\_\_\_\_.

- A) a strong predictor of child PTSD
- B) not correlated with child PTSD
- C) unrelated to GR methylation
- D) weakly associated with child PTSD

Answer: A

*Page Ref: 71 Box: BIOLOGY AND ENVIRONMENT: The Tutsi Genocide and Epigenetic Transmission of Maternal Stress to Children*

*Skill Level: Remember*

*Objective: 2.6 Explain the various ways heredity and environment may combine to influence complex traits.*

*Topic: Understanding the Relationship Between Heredity and Environment*

*Difficulty Level: Moderate*

124. In a study of Tutsi women who were pregnant during the genocide, compared with non-exposed mothers, mothers who witnessed the genocidal carnage had \_\_\_\_\_.

- A) higher PTSD and depression scores, but their children displayed weaker GR methylation
- B) substantially higher PTSD and depression scores, and their children displayed stronger GR methylation
- C) higher PTSD scores and lower depression scores, and their children did not show GR methylation
- D) similar PTSD and depression scores, but their children displayed stronger GR methylation

Answer: B

*Page Ref: 71 Box: BIOLOGY AND ENVIRONMENT: The Tutsi Genocide and Epigenetic Transmission of Maternal Stress to Children*

*Skill Level: Remember*

*Objective: 2.6 Explain the various ways heredity and environment may combine to influence complex traits.*

*Topic: Understanding the Relationship Between Heredity and Environment*

*Difficulty Level: Moderate*

125. Development is best understood as \_\_\_\_\_.

- A) genetically determined
- B) environmentally influenced
- C) a series of complex exchanges between nature and nurture
- D) an unsolvable puzzle

Answer: C

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*Skill Level: Understand*

*Objective: 2.6 Explain the various ways heredity and environment may combine to influence complex traits.*

*Topic: Understanding the Relationship Between Heredity and Environment*

*Difficulty Level: Moderate*

## ESSAY

126. Define dizygotic twins. Summarize the genetic and environmental factors that increase the chances of giving birth to them.

Answer: Dizygotic, or fraternal, twins are the most common type of multiple offspring. Fraternal twins result from the release and fertilization of two ova. Genetically, they are no more alike than ordinary siblings. Older maternal age, fertility drugs, and in vitro fertilization are major causes of the dramatic rise in fraternal twinning and other multiple births in industrialized nations over the past several decades. Currently, fraternal twins account for 1 in about every 33 births in the United States. Fraternal twinning occurs in 6 to 9 per 1,000 births among Asians and Hispanics, 9 to 12 per 1,000 births among white Europeans, and 11 to 18 or more per 1,000 births among black Africans. Dizygotic twinning occurs more often among women whose mothers and sisters gave birth to fraternal twins, suggesting a hereditary influence through the female line. Incidence of fraternal twinning rises with maternal age, peaking between 35 and 39 years, and then rapidly falls. It is more likely with each additional birth and with fertility hormones. Fraternal twinning occurs less often among women with poor diets and more often among women who are tall and overweight or of normal weight as opposed to slight body build.

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127. Explain X-linked inheritance and how it affects both males and females.

Answer: Males and females have an equal chance of inheriting recessive disorders carried on the autosomes, such as PKU and sickle cell anemia. But when a harmful allele is carried on the X chromosome, X-linked inheritance applies. Males are more likely to be affected because their sex chromosomes do not match. In females, any recessive allele on one X chromosome has a good chance of being suppressed by a dominant allele on the other X. But the Y chromosome is only about one-third as long and therefore lacks many corresponding genes to override those on the X. A well-known example is hemophilia, a disorder in which the blood fails to clot normally. There is a greater likelihood of inheritance by male children whose mothers carry the abnormal allele.

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128. How do contemporary researchers view the family? Describe direct and indirect influences on the family, and provide examples of each.

Answer: Contemporary researchers view the family as a network of interdependent relationships. Bidirectional influences exist in which the behaviors of each family member affect those of others. These influences operate both directly and indirectly. Kind, patient communication evokes cooperative, harmonious responses, whereas harshness and impatience engender angry, resistive behavior. Each of these reactions, in turn, forges a new link in the interactive chain. In the first instance, a positive message tends to follow; in the second, a negative or avoidant one is likely. When parents are firm but warm, children tend to comply with their requests. And when children cooperate, their parents are likely to be warm and gentle in the future. Furthermore, third parties indirectly influence the family. Interaction between any two family members is affected by others present in the setting. Third parties can serve as supports for or barriers to development. For example, when a marital relationship is warm and

considerate, mothers and fathers are more likely to engage in effective coparenting. Effective coparenting, in turn, fosters a positive marital relationship.

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129. Why are so many affluent youths troubled?

Answer: Despite their advanced education and great material wealth, affluent parents—those in prestigious and high-paying occupations—too often fail to engage in family interaction and parenting that promote favorable development. In several studies, researchers tracked the adjustment of youths growing up in wealthy suburbs. By seventh grade, many showed serious problems that worsened in high school. Their school grades were poor, and they were more likely than youths in general to engage in alcohol and drug use, to commit delinquent acts, and to report high levels of anxiety and depression. Compared with their better-adjusted counterparts, poorly adjusted affluent young people report less emotional closeness, less supervision, and fewer serious consequences for misbehaviors from their parents, who lead professionally and socially demanding lives. As a group, wealthy parents are nearly as physically and emotionally unavailable to their youngsters as parents coping with serious financial strain. At the same time, these parents often make excessive demands for achievement and are critical when their children perform less than perfectly. Adolescents whose parents value their accomplishments more than their character are more likely to have academic and emotional problems. For both affluent and low-SES youths, a simple routine—eating dinner with parents—is associated with a reduction in adjustment difficulties, even after many other aspects of parenting are controlled. Interventions that make wealthy parents aware of the high costs of a competitive lifestyle, weak involvement in children's lives, and unrealistically high expectations are badly needed.

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130. Describe kinship studies, and explain how they are used in the field of developmental science.

Answer: Kinship studies compare the characteristics of family members. The most common type of kinship study compares identical twins, who share all their genes, with fraternal twins, who, on average, share only half. If people who are genetically more alike are also more similar in intelligence and personality, then the researcher assumes that heredity plays an important role. Kinship studies are used in the field of developmental science to help determine which traits and behaviors have a genetic link. For example, kinship studies of intelligence provide some of the most controversial findings in the field. Some experts claim a strong genetic influence, whereas others believe that heredity is barely involved. Currently, most kinship findings support a moderate role for heredity. Heritability research also reveals that genetic factors are important in personality. Unlike intelligence, however, heritability of personality does not increase over the lifespan. Finally, kinship studies can offer information about the role of heredity in psychological disorders, antisocial behavior, and depression.

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131. Describe the concept of gene–environment correlation, including passive, evocative, and active types. Define niche-picking.

Answer: A major problem in trying to separate heredity and environment is that they are often correlated. According to the concept of gene–environment correlation, our genes influence the environments to which we are exposed. At younger ages, two types of gene–environment correlation are common. In passive



correlation, the child has no control over the connection. Parents provide environments influenced by their own heredity. For example, musically inclined parents enroll their children in music lessons. In evocative correlation, children evoke responses that are influenced by the child's heredity, and these responses strengthen the child's original style. For example, a cooperative, attentive child is likely to receive more patient and sensitive interactions from parents than an inattentive, distractible child. At older ages, active correlation becomes common. Children seek environments that fit with their genetic tendencies. For example, the musically talented child joins the school choir. Niche-picking is the tendency to actively choose environments that complement our heredity. Infants and young children cannot do much niche-picking because adults select environments for them. However, older children, adolescents, and adults are increasingly in charge of their environments.

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