

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

Page Ref: 45

Skill: Apply

Objective: 2.1

- 2) Phenotypes depend in part on an individual's
- A) cells.
 - B) chromosomes.
 - C) genotypes.
 - D) DNA.

Answer: C

Page Ref: 45

Skill: Remember

Objective: 2.1

- 3) A _____ is a complex blend of genetic information that determines the species and influences unique characteristics.
- A) chromosome
 - B) genotype
 - C) phenotype
 - D) karyotype

Answer: B

Page Ref: 45

Skill: Remember

Objective: 2.1

- 4) Within every cell (except red blood cells) is a control center, or
- A) phenotype.
 - B) nucleus.
 - C) genotype.
 - D) zygote.

Answer: B

Page Ref: 46

Skill: Remember

Objective: 2.1

- 5) Rodlike structures called _____ store and transmit genetic information.
- A) phenotypes
 - B) chromosomes
 - C) genotypes
 - D) genes

Answer: B

Page Ref: 46

Skill: Remember

Objective: 2.1

- 6) Generally, human _____ come in 23 matching pairs.
- A) chromosomes
 - B) phenotypes
 - C) cells
 - D) genotypes

Answer: A

Page Ref: 46

Skill: Remember

Objective: 2.1

- 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: 46

Skill: Remember

Objective: 2.1

- 8) Research shows that _____ genes lie along the human chromosomes.
- A) 23 pairs of
 - B) 2,000 to 2,500
 - C) 20,000 to 25,000
 - D) 200,000 to 250,000

Answer: C

Page Ref: 46

Skill: Remember

Objective: 2.1

- 9) Zookeeper Ross knows that he shares some of his genetic makeup with the chimpanzee, Chumley. You could tell Ross that between _____ percent of their DNA is identical.
- A) 20 and 25
 - B) 50 and 55
 - C) 75 and 80
 - D) 98 and 99

Answer: D

Page Ref: 46

Skill: Apply

Objective: 2.1

- 10) Lynn, a Canadian, and Sasha, a Russian, are probably about _____ percent genetically identical.
- A) 50.1
 - B) 75.1
 - C) 90.1
 - D) 99.1

Answer: D

Page Ref: 46

Skill: Apply

Objective: 2.1

- 11) A unique feature of DNA is that it can duplicate itself through a process called
- A) canalization.
 - B) mitosis.
 - C) genomic imprinting.
 - D) meiosis.

Answer: B

Page Ref: 46

Skill: Understand

Objective: 2.1

- 12) During mitosis,
- A) each new body cell contains unique genetic information.
 - B) cells divide in half to form the fertilized ovum.
 - C) the chromosomes copy themselves.
 - D) each new body cell contains 23 chromosomes.

Answer: C

Page Ref: 46

Skill: Understand

Objective: 2.1

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

Answer: B

Page Ref: 46

Skill: Remember

Objective: 2.1

- 14) _____ are the biological foundation on which our characteristics are built.
- A) Proteins
 - B) Genes
 - C) Chromosomes
 - D) Gametes

Answer: A

Page Ref: 46

Skill: Remember

Objective: 2.1

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

Answer: B

Page Ref: 46

Skill: Remember

Objective: 2.1

- 16) 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: 46

Skill: Understand

Objective: 2.1

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

Answer: D

Page Ref: 46

Skill: Understand

Objective: 2.1

- 18) When sperm and ovum unite at conception, a(n) _____ results.
- A) autosome
 - B) gamete
 - C) zygote
 - D) allele

Answer: C

Page Ref: 46

Skill: Remember

Objective: 2.1

- 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

Page Ref: 47

Skill: Understand

Objective: 2.1

- 20) The genetic variability produced by meiosis is
- A) rare.
 - B) male dominant.
 - C) adaptive.
 - D) female dominant.

Answer: C

Page Ref: 47

Skill: Understand

Objective: 2.1

- 21) In the male,
- A) meiosis results in just one sperm cell.
 - B) the cells from which sperm arise are produced continuously throughout life.
 - C) sperm cells do not reach maturity until adolescence.
 - D) about 1 to 2 million sperm are produced when meiosis is complete.

Answer: B

Page Ref: 47

Skill: Understand

Objective: 2.1

- 22) 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: 47

Skill: Understand

Objective: 2.1

- 23) In the female, meiosis results in
- A) just one ovum.
 - B) two ova.
 - C) three ova.
 - D) four ova.

Answer: A

Page Ref: 47

Skill: Remember

Objective: 2.1

- 24) Of matching pairs of chromosomes, 22 of 23 are called _____ and one pair consists of _____ chromosomes.
- A) gametes; sex
 - B) zygotes; XX
 - C) autosomes; sex
 - D) autosomes; YY

Answer: C

Page Ref: 47

Skill: Remember

Objective: 2.1

- 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

Page Ref: 47

Skill: Apply

Objective: 2.1

- 26) The sex of a new organism is determined by whether
- A) the X and Y chromosomes separate into sperm cells or ovum.
 - B) an X-bearing sperm or a Y-bearing sperm fertilizes the ovum.
 - C) the sperm fertilizes an X-bearing egg or a Y-bearing egg.
 - D) the ovum is carrying an X chromosome or a Y chromosome.

Answer: B

Page Ref: 47

Skill: Understand

Objective: 2.1

- 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: 47

Skill: Apply

Objective: 2.1

- 28) Dizygotic twins
- A) have the same genetic makeup.
 - B) develop more rapidly than children of single births.
 - C) are no more alike than ordinary siblings.
 - D) are less likely with each additional birth.

Answer: C

Page Ref: 47

Skill: Understand

Objective: 2.1

- 29) Twins occur more often among _____ women than _____ women.
- A) white; black
 - B) Asian; black
 - C) tall; short
 - D) younger; older

Answer: C

Page Ref: 47

Skill: Remember

Objective: 2.1

- 30) A zygote that separates into two clusters of cells instead of just one produces
- A) identical twins.
 - B) dizygotic twins.
 - C) fraternal twins.
 - D) triple X syndrome.

Answer: A

Page Ref: 48

Skill: Understand

Objective: 2.1

- 31) Candace and Cassidy, like all monozygotic twins,
- A) have the same genetic makeup.
 - B) will develop more rapidly than children of single births.
 - C) are no more alike than ordinary siblings.
 - D) will be healthier than children of single births.

Answer: A

Page Ref: 48

Skill: Apply

Objective: 2.1

- 32) If the alleles from both parents _____, the child is _____.
- A) are alike; heterozygous
 - B) differ; homozygous
 - C) are alike; a carrier
 - D) differ; heterozygous

Answer: D

Page Ref: 48

Skill: Understand

Objective: 2.2

- 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: 48

Skill: Remember

Objective: 2.2

- 34) Which of the following is a recessive characteristic?
- A) curly hair
 - B) facial dimples
 - C) red hair
 - D) double-jointedness

Answer: C

Page Ref: 48

Skill: Understand

Objective: 2.2

- 35) Which of the following 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

Page Ref: 50

Skill: Understand

Objective: 2.2

- 36) North Americans with sickle cell anemia have an average life expectancy of _____ years.
- A) 5
 - B) 25
 - C) 55
 - D) 75

Answer: C

Page Ref: 50

Skill: Remember

Objective: 2.2

- 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

Page Ref: 50

Skill: Understand

Objective: 2.2

- 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 carried on the X chromosome.
 - D) his sex chromosomes match, which makes him more susceptible to disease.

Answer: C

Page Ref: 50

Skill: Apply

Objective: 2.2

- 39) Studies of sex differences show that
- A) worldwide, approximately 106 girls are born for every 100 boys.
 - B) the proportion of male births has declined in many industrialized countries in recent decades.
 - C) rates of miscarriage, infant death, and childhood death are higher among females than males.
 - D) rates of mental retardation, learning disabilities, and behavior disorders are higher among females than males.

Answer: B

Page Ref: 51

Skill: Understand

Objective: 2.2

- 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

Page Ref: 51

Skill: Understand

Objective: 2.2

- 41) In which of the following disorders 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: 51

Skill: Understand

Objective: 2.2

- 42) _____ is a sudden but permanent change in a segment in DNA that can lead to _____.
- A) Mutation; genetic abnormalities
 - B) Meiosis; X-linked disorders
 - C) Mitosis, fragile X syndrome
 - D) Genomic imprinting; mutations

Answer: A

Page Ref: 51

Skill: Remember

Objective: 2.2

- 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) exposure to nonionizing forms of radiation, such as microwaves, can cause genetic damage.

Answer: A

Page Ref: 51

Skill: Understand

Objective: 2.2

- 44) Gilles has had frequent and high exposure to radiation in his occupation for the past ten years. Gilles's offspring are at greater risk for _____ than children whose fathers were not exposed to radiation.
- A) cystic fibrosis
 - B) childhood cancer
 - C) PKU
 - D) hemophilia

Answer: B

Page Ref: 51

Skill: Apply

Objective: 2.2

45) Characteristics that vary on a continuum among people, such as height, weight, or intelligence, are most likely determined by _____ inheritance.

- A) X-linked
- B) polygenic
- C) dominant–recessive
- D) paternal

Answer: B

Page Ref: 52

Skill: Understand

Objective: 2.2

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

Page Ref: 52

Skill: Understand

Objective: 2.3

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: 52

Skill: Apply

Objective: 2.3

48) The risk of bearing a child with Down syndrome rises dramatically with

- A) multiple births.
- B) maternal age.
- C) prenatal tobacco exposure.
- D) prenatal malnutrition.

Answer: B

Page Ref: 53

Skill: Understand

Objective: 2.3

49) The most common sex chromosome disorders involve

- A) aggressive and antisocial behavior, particularly in adolescent males.
- B) the presence of an extra chromosome (either X or Y) or the absence of one X in females.
- C) spontaneous miscarriage in the first or second trimester of pregnancy.
- D) mental retardation and severe physical deformities.

Answer: B

Page Ref: 53

Skill: Understand

Objective: 2.3

- 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 mental retardation.

Answer: C

Page Ref: 53

Skill: Understand

Objective: 2.3

- 51) The communication process of _____ can help couples assess their chances of giving birth to a baby with a hereditary disorder and choose the best course of action in view of risks and family goals.
- A) genetic engineering
 - B) prenatal diagnosis
 - C) preimplantation genetic diagnosis
 - D) genetic counseling

Answer: D

Page Ref: 53

Skill: Remember

Objective: 2.4

- 52) Mr. and Mrs. Hopewell are concerned because they have been trying without success to have a baby for over a year. Which of the following procedures would you recommend to them?
- A) gene therapy
 - B) genetic counseling
 - C) genetic engineering
 - D) fetal medicine

Answer: B

Page Ref: 53–54

Skill: Apply

Objective: 2.4

- 53) If a family history of mental retardation, 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

Page Ref: 54–55

Skill: Remember

Objective: 2.4

- 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

Page Ref: 54 Box: SOCIAL ISSUES: HEALTH: The Pros and Cons of Reproductive Technologies

Skill: Understand

Objective: 2.4

- 55) With _____, a woman is given hormones that stimulate the ripening of several ova. These are removed surgically and placed in a dish of nutrients, to which sperm are added.
- A) donor insemination
 - B) in vitro fertilization
 - C) surrogacy
 - D) genetic engineering

Answer: B

Page Ref: 54 Box: SOCIAL ISSUES: HEALTH: The Pros and Cons of Reproductive Technologies

Skill: Remember

Objective: 2.4

- 56) Children conceived through in vitro fertilization
- A) may be genetically unrelated to both of their parents.
 - B) tend to develop insecure attachments to their parents during infancy.
 - C) cannot be born to postmenopausal women.
 - D) tend to be less well-adjusted than their naturally conceived counterparts.

Answer: A

Page Ref: 54 Box: SOCIAL ISSUES: HEALTH: The Pros and Cons of Reproductive Technologies

Skill: Understand

Objective: 2.4

- 57) Which of the following is an ethical concern regarding the use of reproductive technologies?
- A) The in vitro “sex sorter” method could lead to parental sex selection.
 - B) Reproductive technologies cannot be used to overcome most male fertility problems.
 - C) More than 75 percent of reproductive technologies result in multiple births.
 - D) A lack of genetic ties often strains the parent–child relationship.

Answer: A

Page Ref: 54 Box: SOCIAL ISSUES: HEALTH: The Pros and Cons of Reproductive Technologies

Skill: Understand

Objective: 2.4

- 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) Surrogate motherhood has been banned in 11 U.S. states and the District of Columbia.

Answer: C

Page Ref: 55 Box: SOCIAL ISSUES: HEALTH: The Pros and Cons of Reproductive Technologies

Skill: Apply

Objective: 2.4

- 59) To detect developmental problems before birth, doctors use
- A) prenatal diagnostic methods.
 - B) a family pedigree.
 - C) gene therapy.
 - D) carrier detectors.

Answer: A

Page Ref: 56

Skill: Remember

Objective: 2.4

- 60) To inspect Jasmine’s fetus for defects of the limbs and face, as well as to allow a sample of fetal blood to be obtained, permitting diagnosis of hemophilia and sickle cell anemia, her doctor should use
- A) amniocentesis.
 - B) chorionic villus sampling.
 - C) ultrafast magnetic resonance imaging.
 - D) fetoscopy.

Answer: D
 Page Ref: 56
 Skill: Apply
 Objective: 2.4

- 61) Except for _____, prenatal diagnosis should not be used routinely because these methods have some chance of injuring the developing organism.
- A) amniocentesis
 - B) fetoscopy
 - C) chorionic villus sampling
 - D) maternal blood analysis

Answer: D
 Page Ref: 56
 Skill: Understand
 Objective: 2.4

- 62) Gene therapy corrects genetic abnormalities by
- A) mapping the sequence of all human DNA base pairs.
 - B) performing surgery to repair defects during the fetal period.
 - C) delivering DNA carrying a functional gene to the cells.
 - D) modifying gene-specified proteins involved in biological aging and disease.

Answer: C
 Page Ref: 57
 Skill: Understand
 Objective: 2.4

- 63) Mr. and Mrs. Hale plan to have a baby. Physical and genetic examinations revealed healthy reproductive systems and no family history of genetic disease. What additional steps would you recommend they take to increase their chances of having a healthy baby?
- A) reducing or eliminating toxins under their control, taking prenatal vitamin–mineral supplements, and ensuring proper nutrition
 - B) seeking gene therapy, genetic counseling, and genetic treatments
 - C) reducing or eliminating toxins under their control and seeking gene therapy
 - D) taking prenatal vitamin–mineral supplements, ensuring proper nutrition, and seeking gene therapy

Answer: A
 Page Ref: 57
 Skill: Apply
 Objective: 2.4

- 64) Most adopted children
- A) have trouble developing feelings of trust and affection toward their adoptive parents.
 - B) become well-adjusted adults.
 - C) fare better if they are adopted after infancy.
 - D) begin to search for their birth parents during early adolescence.

Answer: B
 Page Ref: 58
 Skill: Understand
 Objective: 2.4

- 65) Contemporary researchers view the family as a(n)
- A) exosystem.
 - B) macrosystem.
 - C) network of interdependent relationships.
 - D) independent social system.

Answer: C

Page Ref: 59

Skill: Understand

Objective: 2.5

- 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: 59–60

Skill: Apply

Objective: 2.5

- 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: 60

Skill: Apply

Objective: 2.5

- 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: 60

Skill: Understand

Objective: 2.5

- 69) Higher-SES parents tend to emphasize the importance of _____ for their children, whereas lower-SES parents tend to emphasize _____.
- A) external characteristics; intellectual abilities
 - B) intellectual abilities; psychological traits
 - C) external characteristics; psychological traits
 - D) psychological traits; external characteristics

Answer: D

Page Ref: 61

Skill: Understand

Objective: 2.5

- 70) Today, about _____ million Americans are affected by poverty.
- A) 6
 - B) 26
 - C) 46
 - D) 66

Answer: C
Page Ref: 61
Skill: Remember
Objective: 2.5

- 71) In the United States, the poverty rate for single mothers with preschool children is nearly _____ percent.
- A) 25
 - B) 35
 - C) 40
 - D) 50

Answer: D
Page Ref: 61
Skill: Remember
Objective: 2.5

- 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: 62
Skill: Remember
Objective: 2.5

- 73) 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: 62
Skill: Understand
Objective: 2.5

- 74) In several studies, affluent teenagers were _____ likely than low-SES youths 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: 62
Skill: Understand
Objective: 2.5

- 75) 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: 63

Skill: Understand

Objective: 2.5

- 76) Neighborhoods have a(n) _____ impact on economically disadvantaged than well-to-do young people.
- A) similar
 - B) opposite
 - C) more negative
 - D) greater

Answer: D

Page Ref: 63

Skill: Remember

Objective: 2.5

- 77) Research on the effects of neighborhoods suggests that
- A) participation in neighborhood organizations does not impact school achievement.
 - B) neighborhood resources have a greater impact on children than adults.
 - C) neighborhoods affect the well-being of children and adults.
 - D) neighborhoods are not important in late adulthood because most elders are homebound.

Answer: C

Page Ref: 63–64

Skill: Understand

Objective: 2.5

- 78) Mr. and Mrs. Parsons feel that an important factor in promoting their children's academic success is frequent contact between teachers and parents. The Parsons would most likely find this offering in a(n)
- A) urban neighborhood.
 - B) large urban area.
 - C) mid-sized city.
 - D) small town.

Answer: D

Page Ref: 64

Skill: Apply

Objective: 2.5

- 79) Compared to those in large urban areas, adults in small towns are _____ likely to _____.
- A) less; have contact with their children's teachers
 - B) less; be actively involved in the community
 - C) more; become victims of crime
 - D) more; occupy positions of leadership

Answer: D

Page Ref: 64

Skill: Understand

Objective: 2.5

- 80) Compared to elders in large cities, elders in small towns are _____ likely to _____.
- A) more; move into planned housing for elders
 - B) less; develop warm relationships with nonrelatives
 - C) less; feel safe and secure
 - D) more; remain actively involved in the community

Answer: D

Page Ref: 64

Skill: Understand

Objective: 2.5

- 81) 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: 65

Skill: Understand

Objective: 2.5

- 82) 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: 65

Skill: Remember

Objective: 2.5

- 83) Which of the following statements about extended families in the United States is true?
- A) More white than black adults have relatives other than their own children living in the same household.
 - B) More black than white adults have relatives other than their own children living in the same household.
 - C) More black than white adults think of themselves as separate entities from their extended families.
 - D) More white than black adults establish family-like relationships with friends and neighbors.

Answer: B

Page Ref: 66 Box: CULTURAL INFLUENCES: The African-American Extended Family

Skill: Understand

Objective: 2.5

- 84) 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) children with insecure attachments to multiple adults.
 - D) more people on welfare and fewer family members with jobs.

Answer: B

Page Ref: 66 Box: CULTURAL INFLUENCES: The African-American Extended Family

Skill: Understand

Objective: 2.5

- 85) Compared with nuclear-family households, extended-family arrangements
- A) produce higher levels of divorce and teenage pregnancy.
 - 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: 66 Box: CULTURAL INFLUENCES: The African-American Extended Family

Skill: Understand

Objective: 2.5

- 86) In collectivist societies, people
- A) think of themselves as separate entities.
 - B) define themselves as part of a group.
 - C) are largely concerned with their own personal needs.
 - D) stress individual goals over group goals.

Answer: B

Page Ref: 65

Skill: Understand

Objective: 2.5

- 87) The United States is strongly _____, whereas most Western European countries lean toward _____.
- A) collectivist; individualism
 - B) individualistic; independence
 - C) collectivist; interdependence
 - D) individualistic; collectivism

Answer: D

Page Ref: 65

Skill: Understand

Objective: 2.5

- 88) When reports indicate that many children are not achieving well in school, the state government grants 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: 65

Skill: Understand

Objective: 2.5

- 89) In the United States, public policies safeguarding _____ lag behind policies for _____.
- A) the elderly; children and youths
 - B) children and youths; the elderly
 - C) the elderly; extended families
 - D) school-age children; preschool children

Answer: B

Page Ref: 65

Skill: Understand

Objective: 2.5

- 90) The United States
- A) ranks lower than any other industrialized nation in infant deaths in the first year of life.
 - B) does not rank well on any key measure of children's health and well-being.
 - C) ranks lower than Canada in childhood poverty.
 - D) ranks higher than any other industrialized nation in public expenditure on education.

Answer: B

Page Ref: 66

Skill: Remember

Objective: 2.5

- 91) Which of the following countries has a higher childhood poverty rate?
- A) Czech Republic
 - B) Norway
 - C) Canada
 - D) Sweden

Answer: C

Page Ref: 67

Skill: Remember

Objective: 2.5

- 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) now has a universal, publicly funded health-care system.

Answer: A

Page Ref: 67

Skill: Remember

Objective: 2.5

- 93) Which of the following countries has the highest teenage birth rate?
- A) United States
 - B) Slovakia
 - C) Czech Republic
 - D) Poland

Answer: A

Page Ref: 67

Skill: Remember

Objective: 2.5

- 94) Approximately _____ percent of U.S. children have no health insurance.
- A) 2
 - B) 5
 - C) 7
 - D) 10

Answer: D

Page Ref: 66–67

Skill: Remember

Objective: 2.5

- 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: 67

Skill: Understand

Objective: 2.5

- 96) Social Security and Medicare consume _____ percent of the U.S. federal budget for the elderly.
- A) 26
 - B) 51
 - C) 76
 - D) 96

Answer: D

Page Ref: 67

Skill: Remember

Objective: 2.5

- 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) just above the poverty line.

Answer: C

Page Ref: 68

Skill: Understand

Objective: 2.5

- 98) Senior citizens in the United States today are
- A) less likely than Canadian seniors to be poverty stricken.
 - B) more likely than other age groups to be among the "near poor."
 - C) more likely to be homeless than in the past.
 - D) less likely to be healthy and independent than in the past.

Answer: B

Page Ref: 68

Skill: Understand

Objective: 2.5

- 99) The Children's Defense Fund
- A) provides free legal services to low-income families of children with disabilities.
 - B) is a nonprofit organization dedicated to helping children in poverty in non-industrialized nations.
 - C) releases *The Policy Book* every two years, providing an in-depth compilation of policies for children.
 - D) engages in public education, legal action, drafting of legislation, congressional testimony, and community organizing.

Answer: D

Page Ref: 68

Skill: Remember

Objective: 2.5

100) _____ is a field devoted to uncovering the contributions of nature and nurture to the diversity in human traits and abilities.

- A) Epigenesis
- B) Behavioral genetics
- C) Environmental genetics
- D) Child development

Answer: B

Page Ref: 69

Skill: Remember

Objective: 2.6

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

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

Answer: A

Page Ref: 69

Skill: Remember

Objective: 2.6

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) a passive correlation

Answer: A

Page Ref: 70

Skill: Apply

Objective: 2.6

103) Research on heritability suggests that

- A) heritability of personality does not increase over the lifespan.
- B) genetic factors play only a minimal role in personality.
- C) heritability of personality increases drastically over the lifespan.
- D) heritability of intelligence does not increase over the lifespan.

Answer: A

Page Ref: 70

Skill: Understand

Objective: 2.6

104) Twin studies of schizophrenia

- A) fail to demonstrate a strong genetic link.
- B) yield unreliable heritabilities, ranging from .20 to .75.
- C) consistently yield high heritabilities, around .80.
- D) consistently yield low heritabilities, around .30.

Answer: C

Page Ref: 70

Skill: Understand

Objective: 2.6

- 105) Because the environments of most twin pairs are less diverse than those of the general population, it is often difficult to
- A) generalize heritability findings to the whole population.
 - B) generate reaction ranges.
 - C) conduct kinship studies.
 - D) determine heritability estimates.

Answer: A

Page Ref: 71

Skill: Understand

Objective: 2.6

- 106) Heritability estimates
- A) are likely to exaggerate the role of the environment.
 - B) are difficult to misapply.
 - C) cannot be used to study complex traits, such as intelligence and personality.
 - D) are likely to exaggerate the role of heredity.

Answer: D

Page Ref: 71

Skill: Understand

Objective: 2.6

- 107) According to the concept of gene–environment interaction,
- A) people respond similarly to the same qualities of the environment.
 - B) people have unique, genetically influenced reactions to particular experiences.
 - C) people with different gene–environment combinations never respond similarly.
 - D) heredity restricts the development of some characteristics to just one or a few outcomes.

Answer: B

Page Ref: 71

Skill: Understand

Objective: 2.6

- 108) If a behavior is strongly canalized, then
- A) it is relatively unaffected by genetic influences.
 - B) only powerful environmental forces can change it.
 - C) only extreme genetic factors can modify it.
 - D) it is easily modifiable.

Answer: B

Page Ref: 72

Skill: Understand

Objective: 2.6

- 109) Which of the following is strongly canalized?
- A) personality
 - B) intelligence
 - C) infant motor development
 - D) athletic ability

Answer: C

Page Ref: 72

Skill: Understand

Objective: 2.6

110) _____ is a strongly canalized skill.

- A) Playing the piano
- B) Swimming
- C) Doing crossword puzzles
- D) Walking

Answer: D

Page Ref: 72

Skill: Understand

Objective: 2.6

111) According to the concept of _____, our genes influence the environments to which we are exposed.

- A) canalization
- B) gene–environment correlation
- C) heritability estimation
- D) natural selection

Answer: B

Page Ref: 72

Skill: Understand

Objective: 2.6

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

- A) range of reaction.
- B) an evocative correlation.
- C) an active correlation.
- D) a passive correlation.

Answer: D

Page Ref: 72

Skill: Apply

Objective: 2.6

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

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

Answer: B

Page Ref: 72

Skill: Apply

Objective: 2.6

114) _____ gene–environment correlation becomes common at older ages.

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

Answer: B

Page Ref: 72

Skill: Understand

Objective: 2.6

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

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

Answer: A

Page Ref: 72

Skill: Apply

Objective: 2.6

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

- A) passive gene–environment correlation.
- B) niche-picking.
- C) evocative gene–environment correlation.
- D) canalization.

Answer: B

Page Ref: 72

Skill: Apply

Objective: 2.6

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

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

Answer: A

Page Ref: 72

Skill: Understand

Objective: 2.6

118) The concept of _____ 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 gene–environment correlation
- B) gene therapy
- C) evocative gene–environment correlation
- D) niche-picking

Answer: D

Page Ref: 72

Skill: Understand

Objective: 2.6

119) Accumulating evidence reveals that the relationship between heredity and the environment is

- A) biased toward genetic factors.
- B) unidirectional.
- C) bidirectional.
- D) biased toward environmental factors.

Answer: C

Page Ref: 73

Skill: Understand

Objective: 2.6

- 120) Which of the following concepts places the most emphasis on bidirectional exchanges between heredity and the environment?
- A) range of reaction
 - B) canalization
 - C) epigenesis
 - D) niche-picking

Answer: C

Page Ref: 73

Skill: Understand

Objective: 2.6

- 121) According to the concept of epigenesis,
- A) heredity determines individual responsiveness to varying environments.
 - B) gene–environment correlation is entirely driven by genetics.
 - C) development results from ongoing, bidirectional exchanges between heredity and the environment.
 - D) heredity restricts the development of some behaviors.

Answer: C

Page Ref: 73

Skill: Understand

Objective: 2.6

- 122) Animal evidence suggests that one reason for an inconsistency in results from studies regarding the risk of attention-deficit hyperactivity disorder (ADHD) in individuals who are homozygous for a chromosome-5 gene (DD) may be that
- A) there are no environmental influences associated with ADHD.
 - B) environmental influences associated with ADHD modify the gene’s activity.
 - C) the gene has no role in the occurrence of ADHD symptoms.
 - D) the DD genotype is only present in about 10 percent of the population.

Answer: B

Page Ref: 74 Box: *BIOLOGY AND ENVIRONMENT: A Case of Epigenesis: Smoking During Pregnancy Alters Gene Expression*

Skill: Understand

Objective: 2.6

- 123) A study of maternal smoking during pregnancy and the DD genotype revealed that
- A) by itself, the DD genotype was related to impulsivity, overactivity, and oppositional behavior.
 - B) children whose mothers had smoked during pregnancy scored lower than children of nonsmokers in impulsivity.
 - C) children whose mothers had smoked during pregnancy scored lower than children of nonsmokers in overactivity.
 - D) children whose mothers had smoked during pregnancy scored higher than children of nonsmokers in impulsivity, overactivity, and oppositional behavior.

Answer: D

Page Ref: 74 Box: *BIOLOGY AND ENVIRONMENT: A Case of Epigenesis: Smoking During Pregnancy Alters Gene Expression*

Skill: Understand

Objective: 2.6

- 124) One reason that the majority of children prenatally exposed to nicotine are at high risk for learning and behavior problems is that the DD genotype is
- A) rare.
 - B) the only gene that contributes to ADHD symptoms.
 - C) widespread.
 - D) impossible to study.

Answer: C

Page Ref: 74 Box: *BIOLOGY AND ENVIRONMENT: A Case of Epigenesis: Smoking During Pregnancy Alters Gene Expression*

Skill: Understand

Objective: 2.6

- 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

Page Ref: 75

Skill: Understand

Objective: 2.6

ESSAY

- 126) Describe the recessive disorder, phenylketonuria. Explain how it occurs and how it is treated.

Answer: One of the most frequently occurring recessive disorders is phenylketonuria, or PKU, which affects the way the body breaks down proteins contained in many foods. Infants born with two recessive alleles lack an enzyme that converts one of the basic amino acids that make up proteins (phenylalanine) into a byproduct essential for body functioning (tyrosine). Without this enzyme, phenylalanine quickly builds to toxic levels that damage the central nervous system. By age 1, infants with PKU can become permanently mentally retarded.

All U.S. states require that each newborn be given a blood test for PKU. If the disease is found, doctors place the baby on a diet low in phenylalanine. As long as dietary treatment begins early and continues, children with PKU usually attain an average level of intelligence and have a normal lifespan. Treated children with PKU nevertheless show mild deficits in certain cognitive skills, such as memory, planning, decision making, and problem solving.

Page Ref: 50

- 127) Explain how harmful genes are created. Define and describe germline and somatic mutation.

Answer: Harmful genes are created by a sudden but permanent change in a segment of DNA. This mutation may affect only one or two genes, or it may involve many genes. Some mutations occur spontaneously, simply by chance. Others are caused by hazardous environmental agents.

Germline mutation takes place in the cells that give rise to gametes. When an affected individual mates, the defective DNA is passed on to the next generation. In somatic mutation, normal body cells mutate, an event that can occur at any time of life. The DNA defect appears in every cell derived from the affected body cell, eventually becoming widespread enough to cause disease (such as cancer) or disability. Some people harbor a genetic susceptibility that causes certain body cells to mutate easily in the presence of triggering events. This helps explain why some individuals develop serious illnesses as a result of smoking, exposure to pollutants, or psychological stress, while others do not. Somatic mutation shows that each individual does not have a single, permanent genotype. Rather, the genetic makeup of each cell can change over time. Somatic mutation increases with age.

Page Ref: 51–52

- 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.

Page Ref: 59–60

- 129) Compare and contrast collectivist and individualistic societies.

Answer: In collectivist societies, people define themselves as part of a group and stress group goals over individual goals. Collectivist societies value an interdependent self, which stresses social harmony, obligations and responsibility to others, and collaborative endeavors. In contrast, in individualistic societies, people think of themselves as separate entities and are largely concerned with their own personal needs. Individualistic societies value an independent self, which emphasizes personal exploration, discovery, achievement, and individual choice in relationships. Although individualism tends to increase as cultures become more complex, cross-national differences remain. The United States is strongly individualistic, whereas most Western European countries lean toward collectivism. Collectivist versus individualistic values have a powerful impact on a nation's approach to protecting the well-being of children, families, and aging citizens. Cultural values of self-reliance and privacy have made the U.S. government hesitant to become involved in family matters.

Page Ref: 65

- 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.

Page Ref: 70

- 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, an active, friendly baby is likely to receive more social stimulation from parents than a passive, quiet baby. 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.

Page Ref: 72

