CHAPTER 2
GENETIC AND ENVIRONMENTAL FOUNDATIONS

MULTIPLE CHOICE

1) Hair color is an example of a
   A) karotype.
   B) phenotype.
   C) gamete.
   D) genotype.
   Answer: B
   Page Ref: 51
   Skill: Remember
   Objective: 2.1

2) Directly observable characteristics are affected by an individual's lifelong history of experiences and also by the individual's
   A) karotypes.
   B) phenotypes.
   C) gametes.
   D) genotype.
   Answer: D
   Page Ref: 51
   Skill: Understand
   Objective: 2.1

3) A _____ is a complex blend of genetic information that determines our species and influences all our unique characteristics.
   A) chromosome
   B) genotype
   C) phenotype
   D) karotype
   Answer: B
   Page Ref: 51
   Skill: Remember
   Objective 2.1

4) The nucleus of a cell contains
   A) karotypes.
   B) chromosomes.
   C) genotypes.
   D) phenotypes.
   Answer: B
   Page Ref: 51
   Skill: Remember
   Objective: 2.1

5) Chromosomes
   A) store and transmit genetic information.
   B) come in 46 matching pairs.
   C) are inherited from the mother only.
   D) are inherited from the father only.
   Answer: A
   Page Ref: 51
   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: 51
   Skill: Remember
   Objective: 2.1

7) Each rung of the DNA ladder
   A) is made up of thousands of chromosomes.
   B) contains 20,000 genes.
   C) consists of a pair of chemical substances called bases.
   D) contains 23 matching pairs.
   Answer: C
   Page Ref: 52
   Skill: Understand
   Objective: 2.1

8) On the DNA ladder, adenine always appears
   A) alone.
   B) with thymine.
   C) with cytosine.
   D) with guanine.
   Answer: B
   Page Ref: 53
   Skill: Remember
   Objective: 2.1

9) An estimated 21,000 _____, which directly affect our body's characteristics, lie along the human chromosomes.
   A) nuclei
   B) regulator genes
   C) protein-coding genes
   D) sex genes
   Answer: C
   Page Ref: 52
   Skill: Remember
   Objective: 2.1

10) Zookeeper Ross knows that he shares some of his genetic makeup with the chimpanzee, Chumley. You could tell Ross that about _____ percent of their DNA is identical.
A) 80
B) 85
C) 90
D) 95
Answer: D
Page Ref: 52
Skill: Apply
Objective: 2.1

11) Recent evidence reveals that, even at the microscopic level,
A) it takes a change in several base pairs to influence human traits.
B) approximately 85 percent of chimpanzee and human DNA is identical.
C) biological events of profound developmental significance are the result of both genetic and nongenetic forces.
D) simpler species have far more proteins than humans or primates.
Answer: C
Page Ref: 53
Skill: Understand
Objective: 2.1

12) Gametes
A) are formed during mitosis.
B) contain only 23 chromosomes.
C) contain 46 chromosomes.
D) determine directly observable characteristics.
Answer: B
Page Ref: 53
Skill: Remember
Objective: 2.1

13) Gametes are formed during a cell division process called _____, which halves the number of chromosomes normally present in body cells.
A) mitosis
B) metaphase
C) meiosis
D) cytokinesis
Answer: C
Page Ref: 53
Skill: Remember
Objective: 2.1

14) The genetic variability produced by meiosis is
A) rare.
B) male dominant.
C) adaptive.
D) female dominant.
Answer: C
Page Ref: 53
Skill: Understand
Objective: 2.4

15) Meiosis results in _____ in the male and _____ in the female.
A) four sperm; one ovum
B) one sperm; four ova
C) millions of sperm; about 40,000 ova
D) four sperm; millions of ova
Answer: A
Page Ref: 53
Skill: Remember
Objective: 2.1

16) Twenty-two of the 23 pairs of chromosomes are matching pairs called
A) sex chromosomes.
B) XX.
C) autosomes.
D) XY.
Answer: C
Page Ref: 53
Skill: Remember
Objective: 2.1

17) Taylor's twenty-third pair of chromosomes is XY. Taylor
A) has phenylketonuria (PKU).
B) has Down syndrome.
C) is male.
D) is female.
Answer: C
Page Ref: 53
Skill: Apply
Objective: 2.1

18) Which of the following statements about sex chromosomes is true?
A) The Y chromosome is large and long, and the X chromosome carries most of the genetic material.
B) Both boys and girls are born with several pairs of X and Y chromosomes.
C) When gametes form in females, the X and Y chromosomes separate into different cells.
D) The sex of a new organism is determined by whether an X-bearing or a Y-bearing sperm fertilizes the ovum.
Answer: D
Page Ref: 53
Skill: Remember
Objective: 2.1

19) Dizygotic twins
A) have the same genetic makeup.
B) result from a zygote that separates into two clusters.
C) are the most common type of multiple offspring.
D) are more alike than ordinary siblings.
Answer: C
Page Ref: 53
Skill: Understand
Objective: 2.1

20) The release and fertilization of two ova results in
A) identical twins.
B) fraternal twins.
C) phenylketonuria (PKU).
D) miscarriage.
Answer: B
Page Ref: 53
Skill: Remember
Objective: 2.1

21) Which of the following individuals is most likely to have fraternal twins?
A) Marlie, a 25-year-old Caucasian American
B) Janie, a 30-year-old Caucasian American
C) Asuka, a 30-year-old Japanese
D) Rhoda, a 30-year-old African
Answer: D
Page Ref: 54
Skill: Apply
Objective: 2.1

22) Which of the following is a major cause of the dramatic rise in fraternal twinning and other multiple births in industrialized nations over the past several decades?
A) global warming
B) older maternal age
C) late fertilization of the ovum
D) variation in oxygen levels
Answer: B
Page Ref: 54
Skill: Understand
Objective: 2.1

23) Monozygotic 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) tend to be healthier than children of single births.
Answer: A
Page Ref: 54
Skill: Remember
Objective: 2.1

24) Which of the following environmental influences contributes to monozygotic twinning?
A) early fertilization of the ovum
B) poor maternal nutrition
C) temperature changes
D) high-fructose diet
Answer: C
Page Ref: 54
Skill: Understand
Objective: 2.1

25) If the alleles from both parents are alike, the child is
A) homozygous.
B) female.
C) heterozygous.
D) a monozygotic twin.
Answer: A
Page Ref: 55
Skill: Understand
Objective: 2.2

26) Heterozygous individuals with just one recessive allele _____ to their children.
A) cannot pass that trait
B) can pass that trait
C) will pass the dominant trait
D) will pass the recessive trait
Answer: B
Page Ref: 55
Skill: Understand
Objective: 2.2

27) Which of the following serious diseases is due to dominant alleles?
A) Cooley's anemia
B) sickle cell anemia
C) Huntington disease
D) hemophilia
Answer: C
Page Ref: 56
Skill: Remember
Objective: 2.2

28) One of the most frequently occurring recessive disorders is
A) phenylketonuria (PKU).
B) Huntington disease.
C) Marfan syndrome.
D) Down syndrome.
Answer: A
Page Ref: 55
Skill: Remember
Objective: 2.2

29) All U.S. states require that each newborn be given a blood test for
A) cystic fibrosis.
B) phenylketonuria (PKU).
C) sickle cell anemia.
D) Tay-Sachs disease.
Answer: B
Page Ref: 55
Skill: Remember
Objective: 2.2

30) Which of the following statements about dominant and recessive diseases is true?
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: 55
Skill: Remember
Objective: 2.2

31) In incomplete dominance,
A) both alleles are expressed in the phenotype.
B) children have a 25 percent chance of being carriers.
C) children have a 50 percent chance of inheriting the disorder.
D) one allele is expressed in the phenotype.
Answer: A
Page Ref: 57
Skill: Understand
Objective: 2.2

32) The sickle cell allele is common among
A) Jews of European descent.
B) children whose parents are of Mediterranean descent.
C) male Caucasians born in North America.
D) black Africans.
Answer: D
Page Ref: 57
Skill: Remember
Objective: 2.2

33) Carriers of the sickle cell allele
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: 57
Skill: Understand
Objective: 2.2

34) When a harmful allele is carried on the X chromosome,
A) females are more likely to be affected.
B) males are more likely to be affected.
C) 50 percent of the female children are likely to have the disorder.
D) 50 percent of the male children are likely to be carriers of the disorder.
Answer: B
Page Ref: 57
Skill: Understand
Objective: 2.2

35) Which of the following statements about sex differences is true?
A) Rates of miscarriage are higher for girls, whereas rates of birth defects are higher for boys.
B) Rates of infant and childhood deaths, learning disabilities, and intellectual disabilities are all higher for girls.
C) Worldwide, about 106 girls are born for every 100 boys.
D) Rates of miscarriage, birth defects, and behavior disorders are all higher for boys.
Answer: D
Page Ref: 57
Skill: Remember
Objective: 2.2

36) Genomic imprinting
A) can be triggered by smoking or exposure to environmental pollutants, such as mercury or lead.
B) occurs when alleles are chemically marked such that one pair member is activated, regardless of its makeup.
C) is more likely to affect males because their sex chromosomes do not match.
D) is always permanent, cannot be erased in the next generation, and occurs in all offspring if it occurs in one.
Answer: B
Page Ref: 58
Skill: Understand
Objective: 2.2

37) Fragile X syndrome
A) is an example of polygenic inheritance.
B) occurs when there is a sudden but permanent change in a segment of DNA.
C) is the most common inherited cause of intellectual disability.
D) occurs more often in females than males because the disorder is X-linked.
Answer: C
Page Ref: 58
Skill: Remember
Objective: 2.2

38) _____ is a sudden but permanent change in a segment in DNA that can lead to _____.
A) Mutation; hereditary abnormalities
B) Meiosis; X-linked disorders
C) Mitosis; fragile X syndrome
D) Genomic imprinting; mutations
Answer: A
Page Ref: 58
Skill: Understand
Objective: 2.2

39) In somatic mutation,
A) the defective DNA is passed on to the next generation.
B) cells that give rise to gametes mutate.
C) the event giving rise to the mutation occurs at conception.
D) the DNA defect appears in every cell derived from the affected body cell.
Answer: D
Page Ref: 58–59
Skill: Remember
Objective: 2.2

40) Characteristics that vary on a continuum among people, such as height, weight, and intelligence, are due to _____ inheritance.
A) X-linked
B) polygenic
C) dominant–recessive
D) paternal
Answer: B
Page Ref: 59
Skill: Understand
Objective: 2.2

41) Most chromosomal defects result from
A) mistakes during meiosis.
B) germline mutations.
C) mistakes during mitosis.
D) somatic mutations.
Answer: A
Page Ref: 59
Skill: Remember
Objective: 2.3

42) When Aziz was born, his parents were told he had the most common chromosomal disorder, occurring in 1 out of every 700 live births. Aziz has _____ syndrome.
A) XYY
B) Klinefelter
C) Turner
D) Down
Answer: D
Page Ref: 59
Skill: Apply
Objective: 2.3

43) The most frequently occurring form of Down syndrome results from
A) an extra broken piece of a twenty-first chromosome attaching to another chromosome.
B) an error during the early stages of mitosis.
C) a failure of the twenty-first pair of chromosomes to separate during meiosis.
D) the inheritance of an extra X chromosome.
Answer: C
Page Ref: 59
Skill: Understand
Objective: 2.3

44) Which of the following individuals has the highest probability of having a child with Down syndrome?
A) Isabella, who is 15 years old
B) Bonny, who is 24 years old
C) Raelyn, who is 33 years old
D) Katrina, who is 42 years old
Answer: D
Page Ref: 60
Skill: Apply
Objective: 2.3

45) Most children with sex chromosome disorders
A) are aggressive and antisocial.
B) have verbal difficulties.
C) have trouble with spatial relations.
D) have very specific cognitive challenges.
Answer: D
Page Ref: 60–61
Skill: Understand
Objective: 2.3

46) 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 have trouble with spatial relationships.
D) most children with these disorders suffer from intellectual disabilities.
Answer: C
Page Ref: 61
Skill: Understand
Objective: 2.3

47) Angela and Tony's first child died in infancy. They badly want to have another child but are worried about Angela's family history of genetic disorders. They want to find out if Angela is a carrier. Angela and Tony are candidates for
A) in vitro fertilization.
B) genetic counseling.
C) donor insemination.
D) amniocentesis.
Answer: B
Page Ref: 61
Skill: Apply
Objective: 2.4

48) 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: 62 Box: Social Issues: Health: The Pros and Cons of Reproductive Technologies
Skill: Understand
Objective: 2.4

49) Studies show that children conceived through donor insemination or in vitro fertilization
A) receive caregiving that is somewhat warmer than children who are conceived naturally.
B) are at greater risk for genetic disorders than their naturally conceived counterparts.
C) tend to experience severe adjustment problems throughout childhood, including insecure attachment to caregivers.
D) are usually well-adjusted until adolescence when they experience a significant rise in psychological problems.
Answer: A
Page Ref: 62–63 Box: Social Issues: Health: The Pros and Cons of Reproductive Technologies
Skill: Understand
Objective: 2.4

50) Which of the following statements about surrogate motherhood is true?
A) Most surrogates have no children of their own.
B) Surrogates cannot be paid for their childbearing services.
C) It usually involves the wealthy as contractors for infants and the less economically advantaged as surrogates.
D) It usually involves younger couples as contractors and older women as surrogates.
Answer: C
Page Ref: 63 Box: Social Issues: Health: The Pros and Cons of Reproductive Technologies
Skill: Remember
Objective: 2.4

51) Which of the following prental diagnostic methods is the most widely used technique?
A) amniocentesis
B) chorionic villus sampling
C) ultrasound
D) maternal blood analysis
Answer: A
Page Ref: 64
Skill: Remember
Objective: 2.4

52) Which of the following is a risk associated with frequent ultrasound use?
A) premature labor
B) miscarriage
C) low birth weight
D) limb deformities
Answer: C
Page Ref: 64
Skill: Understand
Objective: 2.4

53) In proteomics,
A) researchers map the sequence of all human DNA base pairs.
B) scientists modify gene-specified proteins involved in disease.
C) doctors correct genetic abnormalities by delivering DNA carrying a functional gene to the cells.
D) the fetus is inspected for defects of the limbs and face using a small tube with a light source.
Answer: B
Page Ref: 65
Skill: Understand
Objective: 2.4

54) Which of the following statements about adoption is true?
A) In Western Europe, more unwed mothers give up their babies than in the past.
B) Adopted children tend to have fewer emotional difficulties than other children.
C) In North America and Western Europe, the availability of healthy babies has declined.
D) Fewer adoptive parents are accepting children who have known developmental problems.
Answer: C
Page Ref: 66
Skill: Remember
Objective: 2.4

55) Most adoptees
A) appear well-adjusted as adults.
B) have persistent cognitive delays.
C) suffer from severe emotional problems.
D) have persistent social problems.
Answer: A
Page Ref: 67
Skill: Understand
Objective: 2.4

56) In power and breadth of influence, no other microsystem context equals the
A) school.
B) church.
C) family.
D) peer group.
Answer: C
Page Ref: 68
Skill: Understand
Objective: 2.5

57) 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: 68
Skill: Apply
Objective: 2.5

58) 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: 69
Skill: Apply
Objective 2.5

59) Jonelle can promote her grandchildren's development indirectly by
A) praising the children rather than offering them encouragement.
B) gently reprimanding the children when they misbehave.
C) providing financial assistance to their parents.
D) implementing a reward system for the children's good behavior.
Answer: C
Page Ref: 69
Skill: Apply
Objective: 2.5

60) 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) have fewer children
D) have children later
Answer: B
Page Ref: 70
Skill: Remember
Objective: 2.5

61) In diverse cultures around the world, _____ in particular fosters patterns of thinking and behaving that greatly improve quality of life, for both parents and children.
A) education of women
B) collectivism
C) living near extended family
D) having one stay-at-home parent
Answer: A
Page Ref: 71
Skill: Understand
Objective: 2.5

62) A United Nations petition called "I am Malalah" demanded that
A) girls be banned from attending school in Pakistan.
B) all children be enrolled in school by the end of 2015.
C) Malalah Yousafzai, a Pakistani schoolgirl, be honored for bravery.
D) girls in developing nations receive free health care.
Answer: B
Page Ref: 70 Box: Social Issues: Education: Worldwide Education of Girls: Transforming Current and Future Generations
Skill: Remember
Objective: 2.5

63) Which of the following is the largest barrier to the worldwide education of girls?
A) cultural beliefs about gender roles
B) reluctance to give up a girl's work at home
C) government-mandated school enrollment fees
D) the limited number of schools in developing areas
Answer: C
Page Ref: 71 Box: Social Issues: Education: Worldwide Education of Girls: Transforming Current and Future Generations
Skill: Understand
Objective: 2.5

64) Affluent parents
A) too often fail to engage in family interaction and parenting that promote favorable development.
B) are less likely than low-SES parents to have children who use alcohol and drugs.
C) are less likely than low-SES parents to have children who report high levels of depression.
D) are more likely than low-SES parents to engage in parenting that promote favorable development.
Answer: A
Page Ref: 72
Skill: Understand
Objective: 2.5

65) 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: 73
Skill: Remember
Objective: 2.5

66) 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: 74
Skill: Remember
Objective: 2.5

67) Which of the following children is least likely to participate in community-center enrichment activities?
A) Meagan, who lives in a stimulating home
B) Francois, who lives in a middle-income neighborhood
C) Chantel, who lives in a chaotic neighborhood
D) Lucius, who lives in an affluent neighborhood
Answer: C
Page Ref: 76
Skill: Apply
Objective: 2.5

68) Nate, whose parents are involved in his school activities and attend parent–teacher conferences, probably
A) resents his parents' involvement in his education.
B) shows better academic achievement than his agemates.
C) lives in a low-SES household with many siblings.
D) attends a private school in a large city.
Answer: B
Page Ref: 77
Skill: Apply
Objective: 2.5

69) Which of the following statements reflects a widely held opinion in the United States?
A) "The government should help poor parents raise their children."
B) "Most people are content with others intruding into family life as long as help is needed."
C) "If parents decide to have a baby, then they should be ready to care for it."
D) "People should try to define themselves as part of a group."
Answer: C
Page Ref: 77
Skill: Understand
Objective: 2.5

70) Today, more black than white adults
A) live farther away from kin and see fewer relatives during the week.
B) fail to establish family-like relationships with friends and neighbors.
C) perceive their relatives as less important in their lives.
D) have relatives other than their own children living in the same household.
Answer: D
Page Ref: 78 Box: Cultural Influences: The African-American Extended Family
Skill: Remember
Objective: 2.5

71) For single mothers rearing children and adolescents, extended-family living is associated with
A) more positive mother–child interaction.
B) increased antisocial behavior in adolescents.
C) decreased self-reliance in adolescents.
D) lower rates of adolescent pregnancy and parenthood.
Answer: A
Page Ref: 78 Box: Cultural Influences: The African-American Extended Family
Skill: Understand
Objective: 2.5

72) In cultures that emphasize _____, people stress group goals over individual goals.
A) individualism
B) independence
C) collectivism
D) industrialization
Answer: C
Page Ref: 79
Skill: Remember
Objective: 2.5

73) In cultures that emphasize individualism, people
A) define themselves as part of a group.
B) are largely concerned with their own personal needs.
C) value an interdependent self.
D) readily endorse public policies for low-SES families.
Answer: B
Page Ref: 79
Skill: Understand
Objective: 2.5

74) Compared to the United States, most Western European countries place greater weight on
A) individualism.
B) independence.
C) familism.
D) collectivism.
Answer: D
Page Ref: 79
Skill: Understand
Objective: 2.5

75) Which of the following statements about how the United States ranks on key measures of children's health and well-being is true?
A) The United States ranks in the top 10 on most key measures of children's health and well-being.
B) The United States ranks higher than Spain and Germany on the childhood poverty indicator.
C) The United States ranks higher than Canada in public expenditure on children's health care.
D) The United States does not rank well on any key measure of children's health and well-being.
Answer: D
Page Ref: 79
Skill: Remember
Objective: 2.5

76) In the United States, affordable child care is
A) usually high in quality.
B) fairly easy to find.
C) in short supply.
D) the norm.
Answer: C
Page Ref: 80
Skill: Remember
Objective: 2.5

77) Which of the following is a reason why attempts to help children and youths have been difficult to realize in the United States?
A) Public policies aimed at fostering children's development have failed in other Western countries.
B) The interdependent nature of U.S. citizens has made government hesitant to become involved in family matters.
C) Children remain unrecognized in the process because they cannot vote or speak out to protect their own interests.
D) Public policies aimed at fostering children's development do not yield valuable returns.
Answer: C
Page Ref: 80
Skill: Understand
Objective: 2.5

78) Which of the following statements about the Convention on the Rights of the Child is true?
A) The United States was one of the first countries in the world whose legislature ratified it.
B) Opponents maintain that its provisions would shift the burden of child rearing from the state to the family.
C) Although it includes the right to freedom of thought, it does not include the right to a free compulsory education.
D) The United States is one of only two countries in the world whose legislature has not yet ratified it.
Answer: D
Page Ref: 80
Skill: Remember
Objective: 2.5

79) In the United States,
A) a significant portion of government spending is devoted to improving quality of child care.
B) the Children's Defense Fund is one of the most vigorous special interest groups devoted to children.
C) the Convention on the Rights of the Child engages in research, education, and legal action on behalf of children.
D) UNICEF is dedicated to advancing the economic security, health, and welfare of U.S. children in low-income families.
Answer: B
Page Ref: 81
Skill: Understand
Objective: 2.5

80) _____ is 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: 82
Skill: Remember
Objective: 2.6

81) Dr. Dimera is interested in measuring the extent to which individual differences in complex traits in a specific population are due to genetic factors. When conducting research, Dr. Dimera will most likely rely on
A) heritability estimates.
B) epigenesis.
C) methylation.
D) gene–environment correlation.
Answer: A
Page Ref: 82
Skill: Apply
Objective: 2.6

82) In a kinship study of intelligence, which of the following sibling pairs will likely share a high correlation?
A) Max and Martin, nontwin brothers
B) Jabar and Tobias, identical twins
C) Marci and Sonia, fraternal twins
D) Mary Jane and Susan, nontwin sisters
Answer: B
Page Ref: 82
Skill: Apply
Objective: 2.6

83) A heritability estimate of .3 for activity level would indicate that differences in _____ could explain _____ percent of the variation in activity level.
A) the environment; 30
B) heredity; 70
C) heredity; 30
D) the environment; 3
Answer: C
Page Ref: 82
Skill: Apply
Objective: 2.6

84) Twin studies of _____ generally yield high heritabilities, whereas the role of heredity in _____ is less strong.
A) bipolar disorder; autism
B) schizophrenia; bipolar disorder
C) Down syndrome; schizophrenia
D) autism; major depression
Answer: D
Page Ref: 83
Skill: Understand
Objective: 2.6

85) Because the environments of most twin pairs are less diverse than those of the general population,
A) heritability estimates are likely to exaggerate the role of heredity.
B) it is often difficult to determine the heritability estimate.
C) it is often difficult to conduct a kinship study.
D) heritability estimates are likely to exaggerate the role of the environment.
Answer: A
Page Ref: 83
Skill: Understand
Objective: 2.6

86) Heritability estimates
A) give precise information on how personality traits develop.
B) are likely to diminish the role of heredity because the environments of twin pairs are less diverse.
C) tell researchers how environment can modify genetic influences.
D) are controversial measures because they can easily be misapplied.
Answer: D
Page Ref: 83
Skill: Understand
Objective: 2.6

87) Today, most researchers view development as
A) mostly influenced by the environment.
B) mostly influenced by heredity.
C) the result of a dynamic interplay between heredity and environment.
D) neither influenced by heredity nor the environment.
Answer: C
Page Ref: 83
Skill: Understand
Objective: 2.6

88) Gene–environment interaction shows that
A) people respond similarly to the same environment.
B) different gene–environment combinations can make two people look the same.
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: 84
Skill: Understand
Objective: 2.6

89) According to the concept of gene–environment correlation,
A) the environments to which we are exposed determine which genes are expressed in our phenotypes.
B) our genes influence the environments to which we are exposed.
C) heredity restricts the development of some characteristics to just one or a few outcomes.
D) our genes influence how we respond to the environment.
Answer: B
Page Ref: 84
Skill: Understand
Objective: 2.6

90) Denyse and David are both actors and have enrolled their children in acting classes. This is an example of a(n) _____ gene–environment correlation.
A) passive
B) evocative
C) active
D) dynamic
Answer: A
Page Ref: 84
Skill: Apply
Objective: 2.6

91) Marcus, a cooperative, attentive child, receives more patient and sensitive interactions from his parents than they give to Erica, his distractible, inattentive sister. This is an example of a(n) _____ gene–environment correlation.
A) passive
B) evocative
C) active
D) dynamic
Answer: B
Page Ref: 84
Skill: Apply
Objective: 2.6

92) Grace, a musically talented youngster, joins the school orchestra and practices her violin. This is an example of a(n) _____ gene–environment correlation.
A) passive
B) evocative
C) active
D) dynamic
Answer: C
Page Ref: 84–85
Skill: Apply
Objective: 2.6

93) Niche-picking is an example of a(n) _____ gene–environment correlation.
A) passive
B) evocative
C) active
D) dynamic
Answer: C
Page Ref: 85
Skill: Understand
Objective: 2.6

94) Which of the following age groups does the most niche-picking?
A) infants
B) toddlers
C) preschoolers
D) adolescents
Answer: D
Page Ref: 85
Skill: Understand
Objective: 2.6

95) Niche-picking sheds light on why _____ report similar stressful life events influenced by personal decisions and actions more often than ordinary siblings.
A) same-sex fraternal twin pairs
B) other-sex fraternal twin pairs
C) identical twin pairs
D) adopted siblings
Answer: C
Page Ref: 85
Skill: Understand
Objective: 2.6

96) The relationship between heredity and environment is
A) is a one-way street.
B) moves from genes to environment to behavior.
C) is best measured using heritability estimates.
D) is bidirectional.
Answer: D
Page Ref: 86
Skill: Understand
Objective: 2.6

97) According to the concept of epigenesis,
A) development results from ongoing, bidirectional exchanges between heredity and all levels of the environment.
B) children's genetic makeup causes them to receive, evoke, and seek experiences that actualize their inborn tendencies.
C) heredity restricts the development of some characteristics to just one or a few outcomes.
D) children's genetic inheritance constrains their responsiveness to varying environments.
Answer: A
Page Ref: 86
Skill: Understand
Objective: 2.6

98) Identical twins Jada and Olivia were very similar in personality throughout childhood. After high school, Jada majored in music and became an elementary school teacher, while Olivia earned a medical degree and joined Doctors Without Borders, traveling to countries gripped by war and epidemics. Later in life, Olivia was more prone to risk-taking than Jada. This difference in personality is a result of
A) niche-picking.
B) alterations to Olivia's chromosome-5 gene.
C) mutations in Olivia's DD genetic makeup.
D) methylation.
Answer: D
Page Ref: 86
Skill: Apply
Objective: 2.6

99) Which of the following individuals is the most likely to score high in impulsivity, according to research on smoking?
A) Daniel, who has a DD genetic makeup and a mother who smoked during pregnancy
B) Reba, who has a DD genetic makeup and a nonsmoking mother
C) John, who has a DD genetic makeup and a mother who smoked prior to becoming pregnant
D) Samantha, who has a DB genetic makeup and a mother who smoked during pregnancy
Answer: A
Page Ref: 87 Box: Biology and Environment: Smoking During Pregnancy Alters Gene Expression
Skill: Apply
Objective: 2.6

100) 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: 87
Skill: Understand
Objective: 2.6

ESSAY

101) Summarize factors that account for the dramatic rise in fraternal twinning and other multiple births in industrialized nations over the past several decades.
Answer: Currently, fraternal twins account for 1 in about every 33 births in the United States. 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—a trend that has recently leveled off with improved in vitro procedures. The rate of fraternal twinning rises with maternal age, peaking between 35 and 39 years, and then rapidly falls. Multiple births occur less often among women with poor diets, and occur more often among women who are tall and overweight or of normal weight as opposed to slight body build. Multiple births are more likely with fertility hormones and in vitro fertilization.
Page Ref: 54

102) Describe phenylketonuria (PKU). Explain how it occurs and how it is treated.
Answer: Phenylketonuria, or PKU, is one of the most frequently occurring recessive disorders. It 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 suffer from permanent intellectual disability.

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. Children who receive this treatment nevertheless show mild deficits in certain cognitive skills, such as memory, planning, decision making, and problem solving, because even small amounts of phenylalanine interfere with brain functioning. But as long as dietary treatment begins early and continues, children with PKU usually attain an average level of intelligence and have a normal lifespan.
Page Ref: 55

103) Discuss direct and indirect influences on family functioning, and provide an example 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. Direct influences occur when the behavior of one family member helps sustain a form of interaction in the other that either promotes or undermines children's well-being. For example, when warmth and affection accompany parents' requests, children tend to comply. And when children cooperate, their parents are likely to be warm and gentle in the future. In contrast, children whose parents discipline harshly and impatiently are likely to refuse and rebel. And because children's misbehavior is stressful, parents may increase their use of punishment, leading to more unruliness by the child. In these examples, each of the children's reactions, in turn, prompts a new link in the interactive chain. Indirect influences occur when interaction between any two family members is affected by others, known as third parties, who are present in the setting. For example, when the parents' marital relationship is warm and considerate, mothers and fathers are more likely to engage in effective coparenting, mutually supporting each other's parenting behaviors. Such parents are warmer, praise and stimulate their children more, and nag and scold them less. In contrast, parents whose relationship is tense and hostile often interfere with one another's child-rearing efforts, are less responsive to children's needs, and are more likely to criticize, express anger, and punish.
Page Ref: 68–69

104) How do family–neighborhood ties reduce parenting stress and promote child development?
Answer: Family–neighborhood ties provide social support, which leads to the following benefits:

- *Parental self-worth.* A neighbor or relative who listens and tries to relieve a parent's concern enhances her self-esteem. The parent, in turn, is likely to interact in a more sensitive and involved manner with her children.
- *Parental access to valuable information and services.* A friend who suggests where a parent might find a job, housing, and affordable child care and youth activities helps make the multiple roles of spouse, parent, and provider easier to fulfill.
- *Child-rearing controls and role models.* Friends, relatives, and other community members may encourage and demonstrate effective parenting practices and discourage ineffective practices.
- *Direct assistance with child rearing.* As children and adolescents participate in their parents' social networks and in neighborhood settings, other adults can influence children through warmth, stimulation, and exposure to a wider array of competent models. In this way, family–neighborhood ties can reduce the impact of ineffective parenting. Nearby adults can also intervene when they see young people skipping school or behaving antisocially.

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105) Compare and contrast collectivist and individualistic societies. Why is the collectivism–individualism distinction controversial?
Answer: In cultures that emphasize collectivism, people stress group goals over individual goals and value interdependent qualities, such as social harmony, obligations and responsibility to others, and collaborative endeavors. In cultures that emphasize individualism, people are largely concerned with their own personal needs and value independence—personal exploration, discovery, achievement, and choice in relationships.

Though the most common basis for comparing cultures, the collectivism–individualism distinction is controversial because both sets of values exist, in varying mixtures, in most cultures. In addition, cultural values are complex, differing in myriad additional ways. Nevertheless, consistent cross-national differences in collectivism–individualism remain, with important consequences: The United States is more individualistic than most Western European countries, which place greater weight on collectivism. These values powerfully affect a nation's approach to protecting the well-being of its children and families.

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106) Define and provide an example of niche-picking.
Answer: Niche-picking is the tendency to actively choose environments that complement our heredity. It is an example of active gene–environment correlation. As children extend their experiences beyond the immediate family and are given the freedom to make more choices, they actively seek environments that fit with their genetic tendencies. For example, a well-coordinated, muscular child joins an after-school sports team. Infants and young children cannot do much niche-picking because adults select environments for them. In contrast, older children and adolescents are much more in charge of their environments.

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