

CHAPTER 2

GENETIC AND ENVIRONMENTAL FOUNDATIONS

MULTIPLE CHOICE

- 1) Connor is 5'11" tall and has brown eyes. Such directly observable characteristics are called _____.
- A) alleles
 - B) phenotypes
 - C) chromosomes
 - D) genotypes

Answer: B

Topic: 2.1 Genetic and Environmental Foundations

Content Ref: p. 51; screen 2.1

Objective: 2.1a Explain what genes are and how they are transmitted from one generation to the next.

Skill: Apply

Difficulty Level: Easy

- 2) Our _____ is the complex blend of genetic information that determines our species and influences all our unique characteristics.
- A) environment
 - B) genotype
 - C) phenotype
 - D) karyotype

Answer: B

Topic: 2.1 Genetic and Environmental Foundations

Content Ref: p. 51; screen 2.1

Objective: 2.1a Explain what genes are and how they are transmitted from one generation to the next.

Skill: Remember

Difficulty Level: Easy

- 3) An individual's _____ is/are affected by his or her lifelong history of experiences.
- A) karyotype
 - B) genotype
 - C) gametes
 - D) phenotype

Answer: D

Topic: 2.1 Genetic and Environmental Foundations

Content Ref: p. 51; screen 2.1

Objective: 2.1a Explain what genes are and how they are transmitted from one generation to the next.

Skill: Understand

Difficulty Level: Easy

- 4) The nucleus of a cell contains _____.
- A) karyotypes
 - B) chromosomes
 - C) gametes
 - D) cytoplasm

Answer: B

Topic: 2.1 Genetic Foundations

Content Ref: p. 52; screen 2.1.2

Objective: 2.1a Explain what genes are and how they are transmitted from one generation to the next.

Skill: Remember

Difficulty Level: Easy

- 5) What role do chromosomes play in genetic processes?
- A) They store and transmit genetic information.
 - B) They ensure that all alleles have an equal chance of being expressed in an individual's phenotype.
 - C) They help prevent genetic mutations from occurring.
 - D) They modify instructions given by protein-coding genes.

Answer: A

Topic: 2.1 Genetic Foundations

Content Ref: p. 51; screen 2.1

Objective: 2.1a Explain what genes are and how they are transmitted from one generation to the next.

Skill: Remember

Difficulty Level: Easy

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

Answer: A

Topic: 2.1 Genetic Foundations

Content Ref: p. 51; screen 2.1

Objective: 2.1a Explain what genes are and how they are transmitted from one generation to the next.

Skill: Remember

Difficulty Level: Easy

- 7) Which statement about human chromosomes is true?
- A) They come in 46 matching pairs.
 - B) They store and transmit genetic information.
 - C) In females, all chromosomes are inherited from the mother.
 - D) Each member of a chromosome pair has a different size, shape, and genetic function.

Answer: B

Topic: 2.1 Genetic Foundations

Content Ref: p. 51; screen 2.1

Objective: 2.1a Explain what genes are and how they are transmitted from one generation to the next.

Skill: Remember

Difficulty Level: Easy

- 8) Each rung of the DNA ladder consists of _____.
- A) thousands of chromosomes
 - B) 20,000 genes
 - C) a pair of bases
 - D) 23 matching pairs of chromosomes

Answer: C

Topic: 2.1 Genetic Foundations

Content Ref: p. 51; screen 2.1.1

Objective: 2.1a Explain what genes are and how they are transmitted from one generation to the next.

Skill: Remember

Difficulty Level: Moderate

- 9) Regulator genes _____.
- A) modify the instructions given by protein-coding genes
 - B) determine the order of the base pairs in a DNA strand
 - C) determine the way base pairs in a DNA strand match up with each other
 - D) are long, double-stranded molecules consisting of pairs of chemical substances called bases
- Answer: A
Topic: 2.1 Genetic Foundations
Content Ref: p. 52; screen 2.1.1
Objective: 2.1a Explain what genes are and how they are transmitted from one generation to the next.
Skill: Remember
Difficulty Level: Moderate
- 10) Which statement about gene expression is true?
- A) A change in a single DNA base pair can affect no more than one trait.
 - B) Many environmental factors within the cell modify gene expression, often influencing human brain development
 - C) Compared to simpler species, humans have fewer proteins related to gene expression.
 - D) Environmental factors do not influence gene expression at the microscopic level.
- Answer: B
Topic: 2.1 Genetic Foundations
Content Ref: p. 52; screen 2.1.1
Objective: 2.1a Explain what genes are and how they are transmitted from one generation to the next.
Skill: Remember
Difficulty Level: Moderate
- 11) Protein-coding genes directly affect our body's characteristics by _____.
- A) determining which alleles will be dominant and recessive
 - B) specifying which bases in DNA can pair with which other bases
 - C) sending instructions for making proteins to the cytoplasm
 - D) dividing pairs of proteins during the process of meiosis
- Answer: C
Topic: 2.1 Genetic Foundations
Content Ref: p. 52; screen 2.1.1
Objective: 2.1a Explain what genes are and how they are transmitted from one generation to the next.
Skill: Remember
Difficulty Level: Easy
- 12) Which statement best explains why humans can be about 99.6 percent genetically identical and still exhibit very different characteristics?
- A) Each rung on the DNA ladder consists of a specific pair of chemical substances called bases.
 - B) In dominant-recessive inheritance, only one allele affects an individual's characteristics.
 - C) Sequences of base pairs provide genetic instructions that affect phenotypes.
 - D) Even a single difference in a DNA base pair can influence many different traits.
- Answer: D
Topic: 2.1 Genetic Foundations
Content Ref: p. 52; screen 2.1.1
Objective: 2.1a Explain what genes are and how they are transmitted from one generation to the next.
Skill: Apply
Difficulty Level: Moderate

- 13) Which statement about human genetic makeup is true?
- A) We do not share any of our DNA with other mammals.
 - B) Changes in multiple DNA base pairs are necessary to influence human traits.
 - C) The species-specific genetic material responsible for human attributes is extensive.
 - D) Gene expression within human cells cannot be modified by environmental factors.

Answer: C

Topic: 2.1 Genetic Foundations

Content Ref: p. 52; screen 2.1.1

Objective: 2.1a Explain what genes are and how they are transmitted from one generation to the next.

Skill: Understand

Difficulty Level: Difficult

- 14) A human gamete differs from other body cells in that the gamete contains _____.
- A) regulator genes but not protein-coding genes
 - B) 23 chromosomes
 - C) chromosomes only from the individual's parent of the same sex
 - D) bases made of adenine, guanine, cytosine, and thymine

Answer: B

Topic: 2.1 Genetic Foundations

Content Ref: p. 53; screen 2.1.2

Objective: 2.1a Explain what genes are and how they are transmitted from one generation to the next.

Skill: Remember

Difficulty Level: Moderate

- 15) During meiosis, _____.
- A) zygotes with 46 chromosomes are formed
 - B) gametes with 23 chromosomes are formed
 - C) the precise combination of genes present in exactly one chromosome is transmitted
 - D) a random amount of genetic material is transmitted from one generation to the next

Answer: B

Topic: 2.1 Genetic Foundations

Content Ref: p. 53; screen 2.1.2

Objective: 2.1a Explain what genes are and how they are transmitted from one generation to the next.

Skill: Remember

Difficulty Level: Moderate

- 16) The wide variety of hereditary combinations we see across generations is attributable to the shuffling of genes that occurs during _____.
- A) meiosis
 - B) methylation
 - C) niche-picking
 - D) proteomics

Answer: A

Topic: 2.1 Genetic Foundations

Content Ref: p. 53; screen 2.1.2

Objective: 2.1a Explain what genes are and how they are transmitted from one generation to the next.

Skill: Understand

Difficulty Level: Moderate

- 17) The genetic variability produced by meiosis is adaptive in that it _____.
- A) creates only gametes with the genes most likely to promote survival in a new environment
 - B) selects genes only from the parent whose genes are responsive to environmental changes
 - C) produces genes with more favorable ratios of adenine to guanine and cytosine to thymine
 - D) makes it likely that at least some individuals will survive as the environment changes

Answer: D

Topic: 2.1 Genetic Foundations

Content Ref: p. 53; screen 2.1.2

Objective: 2.1a Explain what genes are and how they are transmitted from one generation to the next.

Skill: Understand

Difficulty Level: Difficult

- 18) Which statement about sperm production in males is true?
- A) The cells from which sperm arise are produced continuously throughout life.
 - B) Males are born with a finite number of sperm-producing cells, which decrease in number as the individual ages.
 - C) Later in life, males have a larger number of cells from which sperm arise, but sperm quality decreases.
 - D) The cells from which sperm arise are produced at an increasing rate from sexual maturity until old age.

Answer: A

Topic: 2.1 Genetic Foundations

Content Ref: p. 53; screen 2.1.3

Objective: 2.1a Explain what genes are and how they are transmitted from one generation to the next.

Skill: Understand

Difficulty Level: Moderate

- 19) Which statement is true about ova production in females?
- A) Female sex cells are produced continuously throughout life, with no change in quality.
 - B) Females are born with a bank of ova that decrease in number over time.
 - C) Ova production is continuous throughout a female's life, but quality decreases with advancing age.
 - D) In a healthy female, ova production begins at birth and continues until puberty.

Answer: B

Topic: 2.1 Genetic Foundations

Content Ref: p. 53; screen 2.1.3

Objective: 2.1a Explain what genes are and how they are transmitted from one generation to the next.

Skill: Remember

Difficulty Level: Moderate

- 20) All but one of the pairs of human chromosomes are matching pairs called _____.
- A) sex chromosomes
 - B) zygotes
 - C) autosomes
 - D) gametes

Answer: C

Topic: 2.1 Genetic Foundations

Content Ref: p. 53; screen 2.1.3

Objective: 2.1a Explain what genes are and how they are transmitted from one generation to the next.

Skill: Remember

Difficulty Level: Easy

- 21) A scientist is examining a cell of an organism and attempting to determine whether the organism is a genetic male or a genetic female. What evidence about the cell, if true, would be most relevant to this question?
- A) The twenty-third pair of chromosomes includes an X chromosome.
 - B) The twenty-third pair of chromosomes includes a Y chromosome.
 - C) The nucleus contains 46 chromosomes in 23 pairs.
 - D) The cell contains protein-coding genes and regulator genes.

Answer: B

Topic: 2.1 Genetic Foundations

Content Ref: p. 53; screen 2.1.3

Objective: 2.1a Explain what genes are and how they are transmitted from one generation to the next.

Skill: Apply

Difficulty Level: Difficult

- 22) Unlike the sex chromosomes that form in females, the sex chromosomes that form in males _____.
- A) can include an X chromosome
 - B) can include a Y chromosome
 - C) never include an X chromosome
 - D) never include a Y chromosome

Answer: B

Topic: 2.1 Genetic Foundations

Content Ref: p. 53; screen 2.1.3

Objective: 2.1a Explain what genes are and how they are transmitted from one generation to the next.

Skill: Apply

Difficulty Level: Difficult

- 23) Which statement about dizygotic twins is true?
- A) They have the same genetic makeup.
 - B) They result from a zygote that separates into two clusters.
 - C) They are the most common type of multiple offspring.
 - D) They are more genetically alike than ordinary siblings.

Answer: C

Topic: 2.1 Genetic Foundations

Content Ref: p. 53; screen 2.1.4

Objective: 2.1a Explain what genes are and how they are transmitted from one generation to the next.

Skill: Remember

Difficulty Level: Moderate

- 24) The release and fertilization of two ova results in _____.
- A) identical twins
 - B) fraternal twins
 - C) phenylketonuria (PKU)
 - D) intersex traits

Answer: B

Topic: 2.1 Genetic Foundations

Content Ref: p. 53; screen 2.1.4

Objective: 2.1a Explain what genes are and how they are transmitted from one generation to the next.

Skill: Remember

Difficulty Level: Easy

- 25) Fraternal twinning and other multiple births have risen dramatically in industrialized nations over the past several decades. What is one reported cause of this increase?
- A) global warming
 - B) older maternal age
 - C) early fertilization of the ovum
 - D) variation in oxygen levels

Answer: B

Topic: 2.1 Genetic Foundations

Content Ref: p. 53; screen 2.1.4

Objective: 2.1a Explain what genes are and how they are transmitted from one generation to the next.

Skill: Understand

Difficulty Level: Moderate

- 26) Conceiving fraternal twins is _____.
- A) less likely among women who are tall or overweight
 - B) less likely among women whose families contain fraternal twins
 - C) more likely among women older than 50 than among women in the 30–34 age range
 - D) more likely among women in the 35–39 age range than among women outside this range

Answer: D

Topic: 2.1 Genetic Foundations

Content Ref: p. 54 Table 2.1 Maternal Factors Linked to Fraternal Twinning; screen 2.1.4

Objective: 2.1a Explain what genes are and how they are transmitted from one generation to the next.

Skill: Understand

Difficulty Level: Difficult

- 27) Monozygotic twins _____.
- A) have the same genetic makeup
 - B) develop more rapidly than children of single births
 - C) are no more genetically alike than ordinary siblings
 - D) tend to be healthier than children of single births

Answer: A

Topic: 2.1 Genetic Foundations

Content Ref: p. 54; screen 2.1.4

Objective: 2.1a Explain what genes are and how they are transmitted from one generation to the next.

Skill: Remember

Difficulty Level: Easy

- 28) Which environmental influence has been shown by animal research to contribute to monozygotic twinning?
- A) early fertilization of the ovum
 - B) poor maternal nutrition
 - C) temperature changes
 - D) stability in oxygen levels

Answer: C

Topic: 2.1 Genetic Foundations

Content Ref: p. 54; screen 2.1.4

Objective: 2.1a Explain what genes are and how they are transmitted from one generation to the next.

Skill: Understand

Difficulty Level: Moderate

- 29) If the alleles from both parents are alike, the child is _____
- A) homozygous for a particular trait
 - B) female
 - C) heterozygous for a particular trait
 - D) a monozygotic twin

Answer: A

Topic: 2.1 Genetic Foundations

Content Ref: p. 54; screen 2.1.5

Objective: 2.1b Describe various patterns of gene–gene interaction.

Skill: Remember

Difficulty Level: Easy

- 30) Heterozygous individuals who receive one recessive allele for a trait _____ to their children.
- A) cannot pass that trait
 - B) can pass that trait
 - C) will always pass the dominant trait
 - D) will always pass the recessive trait

Answer: B

Topic: 2.1 Genetic Foundations

Content Ref: p. 55; screen 2.1.5

Objective: 2.1b Describe various patterns of gene–gene interaction.

Skill: Understand

Difficulty Level: Moderate

- 31) Carriers of a trait _____.
- A) are heterozygous, with just one recessive allele
 - B) are heterozygous, with two recessive alleles
 - C) are homozygous, with two dominant alleles
 - D) are homozygous, with two recessive alleles

Answer: A

Topic: 2.1 Genetic Foundations

Content Ref: p. 55; screen 2.1.5

Objective: 2.1b Describe various patterns of gene–gene interaction.

Skill: Understand

Difficulty Level: Moderate

- 32) 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) Huntington disease

Answer: B

Topic: 2.1 Genetic Foundations

Content Ref: p. 55; screen 2.1.5

Objective: 2.1b Describe various patterns of gene–gene interaction.

Skill: Remember

Difficulty Level: Easy

- 33) One well-known recessive disorder that is treatable is _____.
- A) phenylketonuria (PKU)
 - B) Huntington disease
 - C) Turner syndrome
 - D) Down syndrome

Answer: A

Topic: 2.1 Genetic Foundations

Content Ref: p. 55; screen 2.1.5

Objective: 2.1b Describe various patterns of gene–gene interaction.

Skill: Remember

Difficulty Level: Easy

- 34) If both parents are heterozygous carriers of a recessive trait, _____ percent of their children can be expected to display the recessive trait in their phenotype.
- A) 0
 - B) 25
 - C) 50
 - D) 100

Answer: B

Topic: 2.1 Genetic Foundations

Content Ref: p. 55 Figure 2.3 Dominant–recessive mode of inheritance, as illustrated by PKU; screen 2.1.5

Objective: 2.1b Describe various patterns of gene–gene interaction.

Skill: Apply

Difficulty Level: Difficult

- 35) Which statement about dominant and recessive diseases is true?
- A) Serious diseases are only rarely due to dominant alleles.
 - B) Recessive alleles have no effect on an individual’s likelihood of developing a disease.
 - C) Children who inherit the dominant allele for a disorder rarely develop that disorder.
 - D) Males are more likely than females to inherit recessive disorders carried on the autosomes.

Answer: A

Topic: 2.1 Genetic Foundations

Content Ref: p. 55; screen 2.1.5

Objective: 2.1b Describe various patterns of gene–gene interaction.

Skill: Remember

Difficulty Level: Difficult

- 36) Which serious disease is caused by inheritance of dominant alleles?
- A) fragile X syndrome
 - B) sickle cell anemia
 - C) Huntington disease
 - D) hemophilia

Answer: C

Topic: 2.1 Genetic Foundations

Content Ref: p. 55; screen 2.1.5

Objective: 2.1b Describe various patterns of gene–gene interaction.

Skill: Remember

Difficulty Level: Easy

- 37) Which statement about Huntington disease is true?
- A) It is a recessive disorder.
 - B) Its symptoms usually do not appear until age 35 or later.
 - C) It occurs in full form when a child inherits two recessive alleles.
 - D) Children who inherit the disorder seldom live long enough to reproduce.

Answer: B

Topic: 2.1 Genetic Foundations

Content Ref: p. 55; screen 2.1.5

Objective: 2.1b Describe various patterns of gene–gene interaction.

Skill: Remember

Difficulty Level: Easy

- 38) Serious diseases are rarely due to dominant alleles because _____.
- A) dominant alleles are less likely to be passed on than recessive alleles
 - B) disorders caused by dominant alleles usually do not produce symptoms until age 35 or later
 - C) children who inherit the recessive allele cannot develop the disorder and are likely to live long enough to reproduce
 - D) children who inherit the dominant allele always develop the disorder and seldom live long enough to reproduce

Answer: D

Topic: 2.1 Genetic Foundations

Content Ref: p. 55; screen 2.1.5

Objective: 2.1b Describe various patterns of gene–gene interaction.

Skill: Understand

Difficulty Level: Difficult

- 39) In incomplete dominance, _____.
- A) both alleles are expressed in the phenotype
 - B) a harmful allele is present on the X chromosome
 - C) no alleles are expressed in the phenotype
 - D) exactly one allele is expressed in the phenotype

Answer: A

Topic: 2.1 Genetic Foundations

Content Ref: p. 55; screen 2.1.5

Objective: 2.1b Describe various patterns of gene–gene interaction.

Skill: Remember

Difficulty Level: Moderate

- 40) The sickle cell allele is common among _____.
- A) Jews of European descent
 - B) people of Mediterranean descent
 - C) male European Americans
 - D) Black Africans

Answer: D

Topic: 2.1 Genetic Foundations

Content Ref: p. 55; screen 2.1.5

Objective: 2.1b Describe various patterns of gene–gene interaction.

Skill: Remember

Difficulty Level: Easy

- 41) 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 special diet
 - C) develop sickle-shaped red blood cells that cause problems with digestion
 - D) are more resistant to malaria than are individuals with two alleles for normal red blood cells

Answer: D

Topic: 2.1 Genetic Foundations

Content Ref: p. 56; screen 2.1.5

Objective: 2.1b Describe various patterns of gene–gene interaction.

Skill: Understand

Difficulty Level: Moderate

- 42) When a harmful allele is carried on the X chromosome, males are _____.
- A) somewhat less likely than females to be affected
 - B) more likely than females to be affected
 - C) as likely as females to be affected
 - D) guaranteed to be unaffected, unlike females

Answer: B

Topic: 2.1 Genetic Foundations

Content Ref: p. 56; screen 2.1.5

Objective: 2.1b Describe various patterns of gene–gene interaction.

Skill: Remember

Difficulty Level: Moderate

- 43) Males are more likely to be affected by a harmful allele carried on the X chromosome because _____.
- A) males have two X chromosomes, doubling their chance of receiving the harmful allele
 - B) males are more likely to receive recessive alleles than dominant alleles
 - C) females have a second X chromosome that could suppress the harmful allele
 - D) females always have a second, dominant allele that suppresses all harmful alleles carried on the X chromosome

Answer: C

Topic: 2.1 Genetic Foundations

Content Ref: p. 56; screen 2.1.5

Objective: 2.1b Describe various patterns of gene–gene interaction.

Skill: Apply

Difficulty Level: Difficult

- 44) The majority of individuals with fragile X syndrome suffer from _____.
- A) a high incidence of childhood cancer
 - B) intellectual disability, attention deficits, and high anxiety
 - C) numerous health problems linked to severe obesity
 - D) a high incidence of diabetes

Answer: B

Topic: 2.1 Genetic Foundations

Content Ref: p. 56; screen 2.1.5

Objective: 2.1b Describe various patterns of gene–gene interaction.

Skill: Remember

Difficulty Level: Moderate

- 45) Which statement about sex differences in birth outcomes is true?
- A) Boys are at higher risk for many genetic diseases because males have a greater variety of genes.
 - B) Intellectual disabilities occur at higher rates in girls, whereas infant and childhood deaths occur at higher rates in boys.
 - C) Worldwide, about 103 girls are born for every 100 boys.
 - D) Rates of miscarriage, birth defects, and intellectual disability are all higher for boys.

Answer: D

Topic: 2.1 Genetic Foundations

Content Ref: p. 56; screen 2.1.5

Objective: 2.1b Describe various patterns of gene–gene interaction.

Skill: Remember

Difficulty Level: Moderate

- 46) China's birth sex ratio is _____, an imbalance that is associated with _____.
- A) 100 boys for every 117 girls; positive social consequences
 - B) 100 boys for every 117 girls; adverse social consequences
 - C) 117 boys for every 100 girls; positive social consequences
 - D) 117 boys for every 100 girls; adverse social consequences

Answer: D

Topic: 2.1 Genetic Foundations

Content Ref: p. 56; screen 2.1.5

Objective: 2.1b Describe various patterns of gene–gene interaction.

Skill: Understand

Difficulty Level: Moderate

- 47) Genomic imprinting differs from dominant–recessive inheritance in that in genomic imprinting _____.
- A) an allele's expression depends on whether or not it has been silenced by chemical marking
 - B) dominant alleles will always be passed to later generations
 - C) recessive alleles will never be passed to later generations
 - D) carriers of a specific trait tend to express that trait later in life

Answer: A

Topic: 2.1 Genetic Foundations

Content Ref: p. 57; screen 2.1.5

Objective: 2.1b Describe various patterns of gene–gene interaction.

Skill: Understand

Difficulty Level: Moderate

- 48) Which statement about mutation is true?
- A) Some mutations occur spontaneously, simply by chance.
 - B) Mutations cannot be caused by environmental agents.
 - C) Most mutations that have been studied help individuals survive in a changing environment
 - D) Somatic mutations reveal that each of us has a single, permanent genotype.

Answer: A

Topic: 2.1 Genetic Foundations

Content Ref: p. 57; screen 2.1.5

Objective: 2.1b Describe various patterns of gene–gene interaction.

Skill: Understand

Difficulty Level: Moderate

- 49) In somatic mutation, the DNA defect _____.
- A) is passed to the next generation
 - B) causes gametes to mutate
 - C) occurs at conception
 - D) appears in every cell derived from the affected body cell

Answer: D

Topic: 2.1 Genetic Foundations

Content Ref: p. 57; screen 2.1.5

Objective: 2.1b Describe various patterns of gene–gene interaction.

Skill: Remember

Difficulty Level: Easy

- 50) 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

Topic: 2.1 Genetic Foundations

Content Ref: p. 58; screen 2.1.5

Objective: 2.1b Describe various patterns of gene–gene interaction.

Skill: Remember

Difficulty Level: Moderate

- 51) Most chromosomal defects result from _____.
- A) mistakes during meiosis
 - B) genomic imprinting
 - C) germline mutations
 - D) somatic mutations

Answer: A

Topic: 2.1 Genetic Foundations

Content Ref: p. 58; screen 2.1.6

Objective: 2.1c Describe major chromosomal abnormalities, and explain how they occur.

Skill: Remember

Difficulty Level: Easy

- 52) The most common chromosomal disorder, occurring in 1 out of every 700 live births, is _____ syndrome.
- A) XYY
 - B) Klinefelter
 - C) fragile X
 - D) Down

Answer: D

Topic: 2.1 Genetic Foundations

Content Ref: p. 58; screen 2.1.6

Objective: 2.1c Describe major chromosomal abnormalities, and explain how they occur.

Skill: Remember

Difficulty Level: Easy

- 53) In 95 percent of cases, Down syndrome results from _____.
- A) an extra broken piece of a twenty-first chromosome attaching to another chromosome
 - B) an error during early prenatal cell duplication
 - C) a failure of the twenty-first pair of chromosomes to separate during meiosis
 - D) the inheritance of an extra X chromosome

Answer: C

Topic: 2.1 Genetic Foundations

Content Ref: p. 58; screen 2.1.6

Objective: 2.1c Describe major chromosomal abnormalities, and explain how they occur.

Skill: Understand

Difficulty Level: Moderate

- 54) Amit is a young child with a flattened face and almond-shaped eyes. He smiles less readily than other children and has weak muscle tone. He also has speech problems and a limited vocabulary. Amit's symptoms are most consistent with what condition?
- A) Down syndrome
 - B) Klinefelter syndrome
 - C) fragile X syndrome
 - D) Prader-Willi syndrome

Answer: A

Topic: 2.1 Genetic Foundations

Content Ref: p. 58; screen 2.1.6

Objective: 2.1c Describe major chromosomal abnormalities, and explain how they occur.

Skill: Apply

Difficulty Level: Difficult

- 55) Which individual would have the highest probability of having a child with Down syndrome if she were to become pregnant?
- A) Zari, age 15
 - B) Caroline, age 24
 - C) Sadie, age 29
 - D) Aisha, age 47

Answer: D

Topic: 2.1 Genetic Foundations

Content Ref: p. 59; screen 2.1.6

Objective: 2.1c Describe major chromosomal abnormalities, and explain how they occur.

Skill: Apply

Difficulty Level: Moderate

- 56) Aside from Down syndrome, the most likely outcome of disorders of the autosomes is that _____.
- A) the child will have lifelong problems with controlling aggression
 - B) specific cognitive challenges will be identified around puberty
 - C) significant cognitive impairment will be diagnosed by age 5
 - D) the child will die before birth, in infancy or in early childhood

Answer: D

Topic: 2.1 Genetic Foundations

Content Ref: p. 59; screen 2.1.6

Objective: 2.1a Explain what genes are and how they are transmitted from one generation to the next.

Skill: Understand

Difficulty Level: Moderate

- 57) Which challenge is common among children with triple X syndrome or Klinefelter syndrome?
- A) occasionally attacking other students in a fit of rage
 - B) repeatedly lying to parents and other authority figures
 - C) having difficulty sustaining social relationships
 - D) struggling with reading and vocabulary

Answer: D

Topic: 2.1 Genetic Foundations

Content Ref: p. 59; screen 2.1.6

Objective: 2.1c Describe major chromosomal abnormalities, and explain how they occur.

Skill: Understand

Difficulty Level: Moderate

- 58) Which statement is supported by research on sex chromosome disorders?
- 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 sex chromosome disorders suffer from intellectual disability.

Answer: C

Topic: 2.1 Genetic Foundations

Content Ref: p. 59; screen 2.1.6

Objective: 2.1c Describe major chromosomal abnormalities, and explain how they occur.

Skill: Understand

Difficulty Level: Moderate

- 59) Bianca and Deion want to have a child, but because Bianca has a family history of fragile X syndrome, they first want to find out if she is a carrier. Bianca and Deion are candidates for _____.
- A) in vitro fertilization
 - B) genetic counseling
 - C) donor insemination
 - D) amniocentesis

Answer: B

Topic: 2.2 Reproductive Choices

Content Ref: p. 60; screen 2.2.1

Objective: 2.2 Discuss counseling, medical procedures, and reproductive options that can assist prospective parents in having healthy children.

Skill: Apply

Difficulty Level: Moderate

- 60) In which situation would donor insemination be considered an appropriate reproductive choice?
- A) to overcome female reproductive difficulties
 - B) to stimulate the ripening of several ova
 - C) to allow a woman without a male partner to become pregnant
 - D) to treat a woman whose fallopian tubes are permanently damaged

Answer: C

Topic: 2.2 Reproductive Choices

Content Ref: pp. 60–61 Box: Social Issues: Health: The Pros and Cons of Reproductive Technologies; screen 2.2.1

Objective: 2.2 Discuss counseling, medical procedures, and reproductive options that can assist prospective parents in having healthy children.

Skill: Apply

Difficulty Level: Moderate

- 61) Studies show that children conceived through donor insemination or in vitro fertilization _____.
- A) receive caregiving that is somewhat warmer than that received by children who are conceived naturally
 - B) are at greater risk for chronic diseases than their naturally conceived counterparts
 - C) tend to experience severe adjustment problems throughout childhood
 - D) are usually well-adjusted until adolescence, when they experience a significant rise in psychological problems

Answer: A

Topic: 2.2 Reproductive Choices

Content Ref: pp. 60–61 Box: Social Issues: Health: The Pros and Cons of Reproductive Technologies; screen 2.2.1

Objective: 2.2 Discuss counseling, medical procedures, and reproductive options that can assist prospective parents in having healthy children.

Skill: Understand

Difficulty Level: Moderate

- 62) Which statement about reproductive technologies is true?
- A) Laws regulating their use vary considerably by state and country.
 - B) In surrogate motherhood, the surrogate is always genetically unrelated to the child.
 - C) Donor insemination and in vitro fertilization are interchangeable terms.
 - D) The success of assisted reproduction increases with age until age 50.

Answer: A

Topic: 2.2 Reproductive Choices

Content Ref: pp. 60–61 Box: Social Issues: Health: The Pros and Cons of Reproductive Technologies; screen 2.2.1

Objective: 2.2 Discuss counseling, medical procedures, and reproductive options that can assist prospective parents in having healthy children.

Skill: Understand

Difficulty Level: Moderate

- 63) The most widely used prenatal diagnostic method is _____.
- A) amniocentesis
 - B) chorionic villus sampling
 - C) ultrasound
 - D) maternal blood analysis

Answer: A

Topic: 2.2 Reproductive Choices

Content Ref: p. 62 Table 2.2 Prenatal Diagnostic Methods; screen 2.2.2

Objective: 2.2 Discuss counseling, medical procedures, and reproductive options that can assist prospective parents in having healthy children.

Skill: Remember

Difficulty Level: Moderate

- 64) One risk associated with frequent ultrasound use in pregnant women is _____.
- A) premature labor
 - B) miscarriage
 - C) limb deformities
 - D) low birth weight

Answer: D

Topic: 2.2 Reproductive Choices

Content Ref: p. 62 Table 2.2 Prenatal Diagnostic Methods; screen 2.2.2

Objective: 2.2 Discuss counseling, medical procedures, and reproductive options that can assist prospective parents in having healthy children.

Skill: Understand

Difficulty Level: Moderate

- 65) The use of proteomics to treat heart disease and cancer involves _____.
- A) mapping the sequence of all human DNA base pairs
 - B) modifying gene-specified proteins involved in the particular disease
 - C) correcting genetic abnormalities by delivering DNA carrying a functional gene to the cells
 - D) using a small tube with a light source to inspect the fetus for structural defects

Answer: B

Topic: 2.2 Reproductive Choices

Content Ref: p 63; screen 2.2.2

Objective: 2.2 Discuss counseling, medical procedures, and reproductive options that can assist prospective parents in having healthy children.

Skill: Remember

Difficulty Level: Moderate

- 66) Which statement about adoption is true?
- A) The worldwide availability of potential adoptees has decreased substantially in the past 20 years.
 - B) Rates of intercountry adoption have increased substantially in recent years.
 - C) More families today are adopting children past infancy.
 - D) Fewer adoptive parents are accepting children with known developmental problems.

Answer: C

Topic: 2.2 Reproductive Choices

Content Ref: p. 64; screen 2.2.3

Objective: 2.2 Discuss counseling, medical procedures, and reproductive options that can assist prospective parents in having healthy children.

Skill: Remember

Difficulty Level: Moderate

- 67) Most adopted children _____.
- A) fare well despite the risks associated with their more problematic childhood experiences
 - B) have persistent social problems linked to insensitive parenting
 - C) are less intelligent than their biological relatives
 - D) have persistent cognitive problems associated with preadoption environmental influences

Answer: A

Topic: 2.2 Reproductive Choices

Content Ref: p. 64; screen 2.2.3

Objective: 2.2 Discuss counseling, medical procedures, and reproductive options that can assist prospective parents in having healthy children.

Skill: Understand

Difficulty Level: Moderate

- 68) Which statement about families is true?
- A) The relationship between parental rejection and developmental problems can be positive or negative, depending on the country studied.
 - B) The unique bonds that an individual forms with his or her family are a key component of that individual's macrosystem.
 - C) Warm, affectionate family ties are a strong predictor of physical and psychological health.
 - D) Most other microsystem contexts are equal to the family in terms of power and breadth of influence.

Answer: C

Topic: 2.3 Environmental Contexts for Development

Content Ref: p. 65; screen 2.3.1

Objective: 2.3 Discuss aspects of children's multi-layered environment that influence their development and well-being.

Skill: Remember

Difficulty Level: Moderate

- 69) When Taye and Morgan willingly comply with parental requests, their parents are likely to be warm and gentle in the future. This is an example of a/an _____ influence between parents and their children.
- A) direct
 - B) coparenting
 - C) maladaptive
 - D) indirect

Answer: A

Topic: 2.3 Environmental Contexts for Development

Content Ref: p. 66; screen 2.3.1

Objective: 2.3 Discuss aspects of children's multi-layered environment that influence their development and well-being.

Skill: Apply

Difficulty Level: Moderate

- 70) Elena and Juan praise and stimulate their children and mutually support each other's parenting behaviors. Elena and Juan are engaging in _____.
- A) collectivism
 - B) permissive parenting
 - C) effective coparenting
 - D) niche-picking

Answer: C

Topic: 2.3 Environmental Contexts for Development

Content Ref: p. 66; screen 2.3.1

Objective: 2.3 Discuss aspects of children's multi-layered environment that influence their development and well-being.

Skill: Apply

Difficulty Level: Moderate

- 71) Years of education, job held, and income earned are factors used to determine a person's _____.
- A) social maturity
 - B) commitment to familism
 - C) macrosystem
 - D) socioeconomic status

Answer: D

Topic: 2.3 Environmental Contexts for Development

Content Ref: p. 67; screen 2.3.2

Objective: 2.3 Discuss aspects of children's multi-layered environment that influence their development and well-being.

Skill: Remember

Difficulty Level: Easy

- 72) Compared with people who work in professional and technical occupations, those who are employed in skilled and semiskilled manual work tend to _____.
- A) marry later
 - B) have more children
 - C) prioritize their children's independence
 - D) have children later in life

Answer: B

Topic: 2.3 Environmental Contexts for Development

Content Ref: p. 67; screen 2.3.2

Objective: 2.3 Discuss aspects of children's multi-layered environment that influence their development and well-being.

Skill: Remember

Difficulty Level: Easy

- 73) Higher-SES parents are most likely to emphasize which trait in their children?
- A) politeness
 - B) neatness
 - C) obedience
 - D) self-esteem

Answer: D

Topic: 2.3 Environmental Contexts for Development

Content Ref: p. 67; screen 2.3.2

Objective: 2.3 Discuss aspects of children's multi-layered environment that influence their development and well-being.

Skill: Understand

Difficulty Level: Moderate

- 74) In a study investigating developmental differences between low-SES and higher-SES children, which finding would be most consistent with current research?
- A) delayed interpersonal development in the higher-SES group
 - B) enhanced cognitive development in the higher-SES group
 - C) lower incidence of behavior problems in the low-SES group
 - D) no cognitive or behavioral differences between the two groups

Answer: B

Topic: 2.3 Environmental Contexts for Development

Content Ref: p. 68; screen 2.3.2

Objective: 2.3 Discuss aspects of children's multi-layered environment that influence their development and well-being.

Skill: Understand

Difficulty Level: Moderate

- 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; commit delinquent acts
 - D) more; have physically and emotionally available parents

Answer: B

Topic: 2.3 Environmental Contexts for Development

Content Ref: p. 68; screen 2.3.2

Objective: 2.3 Discuss aspects of children's multi-layered environment that influence their development and well-being.

Skill: Understand

Difficulty Level: Moderate

- 76) Research in four developing nations on the impact of education for women revealed that _____.
- A) although mothers generally use their education to support their children's intellectual and physical development, education has few benefits for women with no children
 - B) educated women take a more active role in their own lives, including family planning, preventive health measures, and promoting healthy behaviors among others in the home
 - C) while educating girls has a diverse range of effects on purely economic issues, it has little effect on the reproductive choices the girls will later make
 - D) increased emphasis on educating girls was associated with a reduction in support for educating boys

Answer: B

Topic: 2.3 Environmental Contexts for Development

Content Ref: pp. 68–69 Box: Social Issues: Education: Worldwide Education of Girls: Transforming Current and Future Generations; screen 2.3.2

Objective: 2.3 Discuss aspects of children's multi-layered environment that influence their development and well-being.

Skill: Understand

Difficulty Level: Moderate

- 77) Compared with mothers who are illiterate, those with literacy skills are likely to _____.
- A) spend more time with their children on a daily basis
 - B) adopt a style of interaction that promotes their children's language development
 - C) engage in more affectionate physical interaction with their children
 - D) promote the education of their daughters over the education of their sons

Answer: B

Topic: 2.3 Environmental Contexts for Development

Content Ref: pp. 68–69 Box: Social Issues: Education: Worldwide Education of Girls: Transforming Current and Future Generations; screen 2.3.2

Objective: 2.3 Discuss aspects of children's multi-layered environment that influence their development and well-being.

Skill: Remember

Difficulty Level: Moderate

- 78) Research in four developing nations indicates that when parents are charged a fee for each child enrolled in school, _____.
- A) cultural beliefs about gender roles play no role in determining which children are sent to school
 - B) poverty-stricken parents tend to send only their sons to school
 - C) no factor other than these fees plays a role in deciding which children are sent to school
 - D) affluent parents are as likely as poverty-stricken parents to send all of their children to school

Answer: B

Topic: 2.3 Environmental Contexts for Development

Content Ref: pp. 68–69 Box: Social Issues: Education: Worldwide Education of Girls: Transforming Current and Future Generations; screen 2.3.2

Objective: 2.3 Discuss aspects of children's multi-layered environment that influence their development and well-being.

Skill: Understand

Difficulty Level: Moderate

79) Which of these groups has the highest poverty rate?

- A) children younger than 18
- B) Hispanic children
- C) Native-American children
- D) single mothers with preschool children

Answer: D

Topic: 2.3 Environmental Contexts for Development

Content Ref: p. 70; screen 2.3.4

Objective: 2.3 Discuss aspects of children's multi-layered environment that influence their development and well-being.

Skill: Understand

Difficulty Level: Moderate

80) In the United States, child poverty rates are _____.

- A) higher than in many other economically advanced nations
- B) lower than in most other economically advanced nations
- C) lower than in any other Western nation
- D) higher than in any other economically advanced nation, but lower than the rates of most other Western nations

Answer: A

Topic: 2.3 Environmental Contexts for Development

Content Ref: p. 70; screen 2.3.4

Objective: 2.3 Discuss aspects of children's multi-layered environment that influence their development and well-being.

Skill: Remember

Difficulty Level: Moderate

81) In rural communities, poverty rates are _____ than they are in urban areas, and those who live in poverty have _____ access to community services.

- A) lower; less
- B) lower, greater
- C) higher; less
- D) higher; greater

Answer: C

Topic: 2.3 Environmental Contexts for Development

Content Ref: p. 71; screen 2.3.4

Objective: 2.3 Discuss aspects of children's multi-layered environment that influence their development and well-being.

Skill: Understand

Difficulty Level: Moderate

82) Which statement best reflects current research on interventions designed to help poverty-stricken children?

- A) Difficulties are best addressed one at a time, with those related to parenting addressed first.
- B) Difficulties are best addressed one at a time, with those related to behavior problems addressed first.
- C) Poverty-stricken children benefit most from multifaceted efforts that focus on many needs at once.
- D) Interventions designed to help children and youths surmount the risks of poverty inevitably do more harm than good.

Answer: C

Topic: 2.3 Environmental Contexts for Development

Content Ref: p. 71; screen 2.3.4

Objective: 2.3 Discuss aspects of children's multi-layered environment that influence their development and well-being.

Skill: Understand

Difficulty Level: Moderate

- 83) Longitudinal follow-up studies of the Better Beginnings, Better Futures Project of Ontario, Canada, revealed a/an _____ participating children.
- A) reduction in the academic performance of
 - B) increase in adolescent delinquency among
 - C) improved sense of community connection among parents of
 - D) improvement in financial well-being among parents of

Answer: C

Topic: 2.3 Environmental Contexts for Development

Content Ref: p. 73; screen 2.3.5

Objective: 2.3 Discuss aspects of children's multi-layered environment that influence their development and well-being.

Skill: Remember

Difficulty Level: Easy

- 84) Lilly, whose parents are involved in her school activities and attend parent–teacher conferences, is likely to _____.
- A) rely on neighborhood resources instead of her parents for advice about academics
 - B) show better academic achievement than her agemates whose parents are less involved
 - C) live in a low-SES household
 - D) have overcome daily stressors associated with deep poverty

Answer: B

Topic: 2.3 Environmental Contexts for Development

Content Ref: p. 74; screen 2.3.5

Objective: 2.3 Discuss aspects of children's multi-layered environment that influence their development and well-being.

Skill: Apply

Difficulty Level: Moderate

- 85) Low-SES parents often do not approach teachers about their children's learning, in part because _____.
- A) there is no evidence connecting parent involvement with better academic outcomes
 - B) daily stressors reduce the time and energy required to do so
 - C) learning has less impact on the psychological health of low-SES students than on that of higher-SES students
 - D) low-SES parents often share backgrounds and values with their children's teachers.

Answer: B

Topic: 2.3 Environmental Contexts for Development

Content Ref: p. 74; screen 2.3.5

Objective: 2.3 Discuss aspects of children's multi-layered environment that influence their development and well-being.

Skill: Understand

Difficulty Level: Moderate

- 86) One widely held opinion in the United States that contributes to the public's relatively low support for government-supported benefits for all families is the view that _____.
- A) the government should adopt policies similar to those of other economically advanced nations
 - B) intruding into family life is acceptable 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

Topic: 2.3 Environmental Contexts for Development

Content Ref: p. 74; screen 2.3.5

Objective: 2.3 Discuss aspects of children's multi-layered environment that influence their development and well-being.

Skill: Understand

Difficulty Level: Moderate

- 87) In cultures that emphasize collectivism, people place greater value on _____.
- A) independence
 - B) personal achievement
 - C) collaborative endeavors
 - D) choice in relationships

Answer: C

Topic: 2.3 Environmental Contexts for Development

Content Ref: p. 74; screen 2.3.6

Objective: 2.3 Discuss aspects of children's multi-layered environment that influence their development and well-being.

Skill: Understand

Difficulty Level: Easy

- 88) In cultures that emphasize _____, people place greater value on independence.
- A) familism
 - B) coparenting
 - C) collectivism
 - D) individualism

Answer: D

Topic: 2.3 Environmental Contexts for Development

Content Ref: p. 74; screen 2.3.6

Objective: 2.3 Discuss aspects of children's multi-layered environment that influence their development and well-being.

Skill: Understand

Difficulty Level: Easy

- 89) Which behavior would be considered a departure from the Hispanic cultural ideal of familism?
- A) daily phone calls between family members
 - B) family members all living in the same city or town
 - C) multiple family members helping to renovate one family member's home
 - D) extended family members getting together only once or twice a year for major holidays

Answer: D

Topic: 2.3 Environmental Contexts for Development

Content Ref: pp. 74, 75 Box: Cultural Influences: Familism Promotes Competence in Hispanic Children and Youths; screen 2.3.6

Objective: 2.3 Discuss aspects of children's multi-layered environment that influence their development and well-being.

Skill: Apply

Difficulty Level: Easy

- 90) An adolescent who strongly values familism would be more likely to _____.
- A) consult with parents or grandparents about major life decisions
 - B) weigh the opinions of distant family members equally with those of close family members
 - C) challenge the views of older relatives in order to demonstrate independence
 - D) focus on issues related to the family to the exclusion of all other issues

Answer: A

Topic: 2.3 Environmental Contexts for Development

Content Ref: pp. 74, 75 Box: *Cultural Influences: Familism Promotes Competence in Hispanic Children and Youths*; screen 2.3.6

Objective: 2.3 Discuss aspects of children's multi-layered environment that influence their development and well-being.

Skill: Apply

Difficulty Level: Moderate

- 91) Compared with most Western countries, the United States places greater value on _____.
- A) individualism
 - B) codependence
 - C) familism
 - D) collectivism

Answer: A

Topic: 2.3 Environmental Contexts for Development

Content Ref: p. 76; screen 2.3.6

Objective: 2.3 Discuss aspects of children's multi-layered environment that influence their development and well-being.

Skill: Understand

Difficulty Level: Easy

- 92) The United States ranks _____.
- A) in the top ten nations on most key measures of children's health and well-being
 - B) higher than Spain and Germany in prevalence of childhood poverty
 - C) higher than Canada in public expenditure on children's health care
 - D) poorly on key measures of children's health and well-being

Answer: D

Topic: 2.3 Environmental Contexts for Development

Content Ref: p. 76 Table 2.3 *How Does the United States Compare to Other Nations on Indicators of Children's Health and Well-Being?*; screen 2.3.6

Objective: 2.3 Discuss aspects of children's multi-layered environment that influence their development and well-being.

Skill: Remember

Difficulty Level: Moderate

- 93) In the United States, affordable child care is _____.
- A) required to be provided to families living in poverty
 - B) easier to acquire if the parents are divorced
 - C) in short supply
 - D) usually high in quality

Answer: C

Topic: 2.3 Environmental Contexts for Development

Content Ref: p. 76; screen 2.3.6

Objective: 2.3 Discuss aspects of children's multi-layered environment that influence their development and well-being.

Skill: Remember

Difficulty Level: Easy

- 94) Which statement expresses a reason that it has been difficult in the United States to enact public policies aimed at the well-being and development of children and youths?
- A) Given the failure of such policies in other Western countries, lawmakers have been resistant to try them in the United States.
 - B) The interdependent nature of U.S. citizens has made the U.S. government hesitant to become involved in family matters.
 - C) Children have less influence in the public policy process because they cannot vote or speak out to protect their own interests.
 - D) Research shows that public policies aimed at fostering children's development do not yield significant returns in cognitive enrichment.

Answer: C

Topic: 2.3 Environmental Contexts for Development

Content Ref: p. 76; screen 2.3.6

Objective: 2.3 Discuss aspects of children's multi-layered environment that influence their development and well-being.

Skill: Understand

Difficulty Level: Moderate

- 95) Which statement about the United Nations Convention on the Rights of the Child is true?
- A) The United States was not involved in drafting this agreement.
 - B) Opponents maintain that its provisions would shift the burden of child rearing from the state to the family.
 - C) Although the Convention includes the right to freedom of thought, it does not include the right to a free compulsory education.
 - D) The United States is the only country in the world whose legislature has not yet ratified it.

Answer: D

Topic: 2.3 Environmental Contexts for Development

Content Ref: p. 77; screen 2.3.6

Objective: 2.3 Discuss aspects of children's multi-layered environment that influence their development and well-being.

Skill: Remember

Difficulty Level: Easy

- 96) _____ 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) Genetics
 - D) Child development

Answer: B

Topic: 2.4 Understanding the Relationship Between Heredity and Environment

Content Ref: p. 78; screen 2.4

Objective: 2.4 Explain the various ways heredity and environment may combine to influence complex traits.

Skill: Remember

Difficulty Level: Easy

- 97) To measure the extent to which individual differences in complex traits in a specific population are due to genetic factors, researchers typically rely on _____.
- A) heritability estimates
 - B) epigenesis
 - C) methylation
 - D) gene–environment correlation

Answer: A

Topic: 2.4 Understanding the Relationship Between Heredity and Environment

Content Ref: p. 78; screen 2.4.1

Objective: 2.4 Explain the various ways heredity and environment may combine to influence complex traits.

Skill: Remember

Difficulty Level: Difficult

- 98) The most common type of kinship study compares _____ with _____.
- A) identical twins; fraternal twins
 - B) identical twins; nontwin siblings
 - C) fraternal twins; nontwin siblings
 - D) nontwin siblings; genetically unrelated family members

Answer: A

Topic: 2.4 Understanding the Relationship Between Heredity and Environment

Content Ref: p. 78; screen 2.4.1

Objective: 2.4 Explain the various ways heredity and environment may combine to influence complex traits.

Skill: Remember

Difficulty Level: Moderate

- 99) When many twin studies are examined, correlations between the intelligence scores of _____ are consistently higher than those of _____, revealing _____ contributions to intelligence.
- A) fraternal twins; identical twins; genetic
 - B) identical twins; fraternal twins; genetic
 - C) nontwin brothers; nontwin sisters; environmental
 - D) nontwin sisters; nontwin brothers; environmental

Answer: B

Topic: 2.4 Understanding the Relationship Between Heredity and Environment

Content Ref: p. 78; screen 2.4.1

Objective: 2.4 Explain the various ways heredity and environment may combine to influence complex traits.

Skill: Remember

Difficulty Level: Moderate

- 100) Heritability estimates for intelligence tend to be _____.
- A) close to zero unless environmental variations are nonexistent
 - B) close to .65 for people of all ages
 - C) higher in adolescence than in infancy
 - D) higher in early childhood than in late adulthood

Answer: C

Topic: 2.4 Understanding the Relationship Between Heredity and Environment

Content Ref: p. 78; screen 2.4.1

Objective: 2.4 Explain the various ways heredity and environment may combine to influence complex traits.

Skill: Understand

Difficulty Level: Difficult

- 101) A heritability estimate of .30 for activity level indicates that differences in _____ could explain _____ percent of the variation among children in activity level.
- A) the environment; 30
 - B) heredity; 3
 - C) heredity; 30
 - D) the environment; 3

Answer: C

Topic: 2.4 Understanding the Relationship Between Heredity and Environment

Content Ref: p. 79; screen 2.4.1

Objective: 2.4 Explain the various ways heredity and environment may combine to influence complex traits.

Skill: Apply

Difficulty Level: Difficult

- 102) 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 compute a heritability estimate
 - C) kinship studies are seen as providing little insight into heritability questions
 - D) heritability estimates are likely to exaggerate the role of the environment

Answer: A

Topic: 2.4 Understanding the Relationship Between Heredity and Environment

Content Ref: p. 79; screen 2.4.1

Objective: 2.4 Explain the various ways heredity and environment may combine to influence complex traits.

Skill: Understand

Difficulty Level: Moderate

- 103) One criticism of heritability estimates is that these measures _____.
- A) are calculated using nonscientific methods
 - B) are likely to undervalue the role of heredity
 - C) enable researchers to manipulate the environment to modify genetic influences
 - D) can easily be misapplied to arrive at faulty conclusions

Answer: D

Topic: 2.4 Understanding the Relationship Between Heredity and Environment

Content Ref: p. 79; screen 2.4.1

Objective: 2.4 Explain the various ways heredity and environment may combine to influence complex traits.

Skill: Understand

Difficulty Level: Moderate

- 104) The heritability of children's intelligence _____.
- A) increases as parental education and income increase
 - B) decreases as parental education and income increase
 - C) increases as parental education increases, and decreases as parental income increases
 - D) shows no consistent relationship with parental education and income

Answer: A

Topic: 2.4 Understanding the Relationship Between Heredity and Environment

Content Ref: p. 79; screen 2.4.1

Objective: 2.4 Explain the various ways heredity and environment may combine to influence complex traits.

Skill: Understand

Difficulty Level: Moderate

105) Today, most researchers view development as _____.

- A) influenced primarily by the environment, with heredity playing only a minimal role
- B) influenced primarily by heredity, with little role played by the environment
- C) the result of a dynamic interplay between heredity and environment
- D) influenced primarily by heredity in infancy, but primarily by the environment later in life

Answer: C

Topic: 2.4 Understanding the Relationship Between Heredity and Environment

Content Ref: p. 79; screen 2.4.1

Objective: 2.4 Explain the various ways heredity and environment may combine to influence complex traits.

Skill: Understand

Difficulty Level: Easy

106) Which statement reflects 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) Correlations between heredity and environment make it easier to determine the distinct influence of each.
- D) Heritabilities for most characteristics suggest that heredity and environment have approximately the same influence

Answer: B

Topic: 2.4 Understanding the Relationship Between Heredity and Environment

Content Ref: p. 80; screen 2.4.2

Objective: 2.4 Explain the various ways heredity and environment may combine to influence complex traits.

Skill: Understand

Difficulty Level: Moderate

107) The child has no control over _____ gene–environment correlation.

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

Answer: A

Content Ref: p. 80; screen 2.4.2

Skill: Understand

Objective: 2.4 Explain the various ways heredity and environment may combine to influence complex traits.

Topic: 2.4 Understanding the Relationship Between Heredity and Environment

Difficulty Level: Moderate

108) Katrina and Charlie, who both work out at the gym regularly, have enrolled their 4-year-old in a gymnastics class for preschoolers. This is an example of _____ gene–environment correlation.

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

Answer: A

Topic: 2.4 Understanding the Relationship Between Heredity and Environment

Content Ref: p. 80; screen 2.4.2

Objective: 2.4 Explain the various ways heredity and environment may combine to influence complex traits.

Skill: Apply

Difficulty Level: Difficult

109) Shane, a cooperative, attentive child, experiences more patient and sensitive interactions with his parents than his sister Rebecca, who tends to be distractible and inattentive. This is an example of _____ gene–environment correlation.

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

Answer: B

Topic: 2.4 Understanding the Relationship Between Heredity and Environment

Content Ref: p. 80; screen 2.4.2

Objective: 2.4 Explain the various ways heredity and environment may combine to influence complex traits.

Skill: Apply

Difficulty Level: Moderate

110) Malik, a musically talented youngster, joins the school orchestra and practices his cello every day. This is an example of _____ gene–environment correlation.

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

Answer: C

Topic: 2.4 Understanding the Relationship Between Heredity and Environment

Content Ref: p. 81; screen 2.4.2

Objective: 2.4 Explain the various ways heredity and environment may combine to influence complex traits.

Skill: Apply

Difficulty Level: Difficult

111) Niche-picking is an expression of _____ gene–environment correlation.

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

Answer: C

Topic: 2.4 Understanding the Relationship Between Heredity and Environment

Content Ref: p. 81; screen 2.4.2

Objective: 2.4 Explain the various ways heredity and environment may combine to influence complex traits.

Skill: Understand

Difficulty Level: Moderate

112) Niche-picking is more common among older children and adolescents than among infants and young children because _____.

- A) the benefits of niche-picking typically do not appear for many years
- B) niche-picking requires specific training that is only available to older children and adolescents
- C) it is impossible to identify genetic tendencies in infants and young children
- D) older children and adolescents have greater ability to select their own environments

Answer: D

Topic: 2.4 Understanding the Relationship Between Heredity and Environment

Content Ref: p. 81; screen 2.4.2

Objective: 2.4 Explain the various ways heredity and environment may combine to influence complex traits.

Skill: Understand

Difficulty Level: Easy

- 113) Niche-picking sheds light on why _____ are more likely than ordinary siblings to report similar stressful life events influenced by personal decisions and actions.
- A) same-sex fraternal twin pairs
 - B) other-sex fraternal twin pairs
 - C) identical twin pairs
 - D) adopted siblings

Answer: C

Topic: 2.4 Understanding the Relationship Between Heredity and Environment

Content Ref: p. 81; screen 2.4.2

Objective: 2.4 Explain the various ways heredity and environment may combine to influence complex traits.

Skill: Understand

Difficulty Level: Easy

- 114) According to available evidence, which statement best describes the relationship between heredity and environment?
- A) People's genes determine their behavior and, therefore, their experiences.
 - B) People's behavior and experiences determine which genes they will pass to future generations
 - C) There is no way to determine conclusively whether genes affect people's behavior and experiences or vice versa.
 - D) Genes affect people's behavior and experiences, but their experiences and behavior also affect gene expression.

Answer: D

Topic: 2.4 Understanding the Relationship Between Heredity and Environment

Content Ref: pp. 81–82; screen 2.4.2

Objective: 2.4 Explain the various ways heredity and environment may combine to influence complex traits.

Skill: Understand

Difficulty Level: Easy

- 115) Which statement reflects the concept of epigenesis?
- A) Children's genetic makeup affects their experiences, and their behavior and experiences affect gene expression.
 - B) Children's genetic makeup leads them to receive, evoke, and actively seek experiences that actualize their inborn tendencies.
 - C) Children tend to choose experiences that complement hereditary influences.
 - D) Children's genetic makeup constrains their responsiveness to varying environments.

Answer: A

Topic: 2.4 Understanding the Relationship Between Heredity and Environment

Content Ref: p. 82; screen 2.4.2

Objective: 2.4 Explain the various ways heredity and environment may combine to influence complex traits.

Skill: Remember

Difficulty Level: Moderate

- 116) The biological consequences of severe maternal stress during pregnancy _____.
- A) can induce epigenetic changes that impair functioning of the body's stress response system in mothers and their children
 - B) produce compensatory responses that maintain healthy levels of stress hormones in children but not their mothers
 - C) affect mothers who experience the stressful events personally, but have no effect on their children
 - D) include memory disruptions and difficulty concentrating but not physical symptoms in mothers and their children

Answer: A

Topic: 2.4 Understanding the Relationship Between Heredity and Environment

Content Ref: pp. 82, 83 Box: Biology and Environment: The Tutsi Genocide and Epigenetic Transmission of Maternal Stress to Children; screen 2.4.2

Objective: 2.4 Explain the various ways heredity and environment may combine to influence complex traits.

Skill: Understand

Difficulty Level: Moderate

- 117) The Tutsi genocide study (that examined the effects of severe maternal trauma on offspring) was unable to definitively conclude that epigenetic processes were responsible for the Tutsi children's compromised capacity to manage stress because _____.
- A) the GR gene plays no role in stress-hormone regulation
 - B) the study did not include pregnant Tutsi women who were outside of Rwanda at the time of the genocide
 - C) it did not rule out other potentially contributing factors such as unfavorable environmental influences
 - D) individuals with PTSD can have cortisol levels that are either too high or too low.

Answer: C

Topic: 2.4 Understanding the Relationship Between Heredity and Environment

Content Ref: pp. 82, 83 Box: Biology and Environment: The Tutsi Genocide and Epigenetic Transmission of Maternal Stress to Children; screen 2.4.2

Objective: 2.4 Explain the various ways heredity and environment may combine to influence complex traits.

Skill: Understand

Difficulty Level: Difficult

ESSAY

- 118) Describe how contemporary researchers view the family, providing examples of both direct and indirect influences within family members' relationships.

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 other family members. These influences can be direct or indirect, depending on whether third parties are involved.

As an illustration of direct influences, kind, patient communication between parent and child tends to evoke cooperative, harmonious responses from both parties, 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.

Interaction between any two family members is affected by third parties present in the setting, who can enhance or impede development indirectly. For example, when a marital relationship is warm and considerate, parents are more likely to engage in effective coparenting (mutual support and collaboration). Effective coparenting, in turn, engenders warm, stimulating parent-child interaction, which promotes healthy child adjustment.

Content Ref: pp. 65–66; screen 2.3.1

- 119) Research indicates affluent youths are more likely than youths in general to display serious adjustment problems, including poor school grades, alcohol and drug use, delinquency, anxiety, and depression. What are the likely factors involved?

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. Poorly adjusted young people from affluent families, compared with their better-adjusted counterparts, report less emotional closeness, less supervision, and fewer serious consequences for misbehavior from their parents. 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 develop academic and emotional problems.

Content Ref: pp. 68–69; screen 2.3.3

120) How can family–neighborhood ties reduce parenting stress and promote child development?

Answer: Family–neighborhood ties provide social support for parents, which in turn can lead to multiple benefits for the family as a whole. For example, when a parent receives reassurances from a neighbor or relative that enhance the parent’s self-esteem, this also benefits children, because parents with greater self-esteem are more likely to interact sensitively with their children. Friends, relatives, and community members may also provide information about the availability of services that can help relieve stress for parents filling multiple roles of parent, spouse, and provider. Furthermore, parents benefit from observing other community members engaging in effective parenting practices. Finally, other adults in the neighborhood can influence children through warmth, stimulation, and exposure to a wider array of competent models, which can reduce the impact of ineffective parenting. Nearby adults can also intervene when they see young people skipping school or behaving antisocially.

Content Ref: pp. 72–73; screen 2.3.5

121) Compare the values of societies that emphasize collectivism and those that emphasize individualism. Provide an example of how these priorities can affect a nation’s policies and programs.

Answer: In cultures that emphasize collectivism, group goals are prioritized over individual goals, and interdependent qualities such as social harmony, obligations and responsibility to others, and collaborative endeavors are highly valued. In cultures that emphasize individualism, personal needs and independence take priority, with a high value placed on individual exploration, discovery, achievement, and choice in relationships.

Characterizing a culture as either collectivistic or individualistic oversimplifies cultural differences: Both sets of values exist in varying mixtures in most cultures. Nevertheless, consistent cross-national differences in collectivism–individualism influence the steps a nation takes to protect the well-being of its children and families. For example, in the United States, which is more individualistic than most Western countries, the public has been slow to endorse government-supported family benefits such as high-quality child care and paid employment leave for meeting family needs.

In collectivist nations, by contrast, the government expects to play a role in promoting social responsibility, protecting children and families, and providing social support through policies and programs such as universal health care, free early childhood education, and efforts to combat child poverty.

Content Ref: pp. 74–76; screen 2.3.6

122) Describe epigenesis and the role epigenetic research plays in understanding the relationship between heredity and environment. Include an example that illustrates this role.

Answer: Epigenesis views human development as a bidirectional relationship between genes and the environment. That is, genes play a role in behavior and experiences, but, equally important, behavior and experiences also affect gene expression. This environmental modification of gene expression can occur at any age, with both positive and negative effects.

Epigenetic research focuses largely on methylation, a biochemical process triggered by certain experiences, in which a set of chemical compounds lands on top of a gene and changes its impact, reducing or silencing its expression. For example, one study examined the potential role of methylation in post-traumatic stress disorder (PTSD) and depression. Participants were Tutsi mothers who had been pregnant during the Rwandan genocide and their adolescent children. Half of the mothers had been directly exposed to the trauma, and half had been outside the country at the time. Findings indicated substantially higher PTSD and depression scores among not only the mothers who had experienced the trauma but also their children. The mothers also displayed greater

methylation of a chromosome-5 gene that plays a role in stress-hormone regulation. Moreover, the children of the trauma-exposed mothers also displayed higher gene methylation.

Although this study leaves open the possibility that other environmental influences played a role in the elevated methylation levels, it nonetheless offers convincing evidence that the effects of maternal trauma can induce epigenetic changes in children, with lasting consequences for development.

Content Ref: p. 82 Box: Biology and Environment: The Tutsi Genocide and Epigenetic Transmission of Maternal Stress to Children; *screen 2.4.2*