

Life Span Development, 17e (Santrock)
Chapter 2 Biological Beginnings

- 1) Red-feathered and blue-feathered birds occupy the same environment. The birds with the red feathers are better able to survive and avoid predators. This means that the population of red-feathered birds will increase in future generations. This illustrates the process of
- A) genetic selection.
 - B) natural adaptation.
 - C) natural selection.
 - D) genetic survival.
- 2) _____ introduced the theory of evolution by natural selection in 1859.
- A) Sigmund Freud
 - B) Charles Darwin
 - C) Stephen Hawking
 - D) Wilhelm Wundt
- 3) If a baboon learns to eat different kinds of fruit instead of relying on only one kind for its nutritive needs, we would argue that this behavior promotes its survival. Thus, the behavior is
- A) adaptive.
 - B) aggressive.
 - C) dominant.
 - D) submissive.
- 4) Evolution takes place
- A) over the course of many generations.
 - B) almost immediately.
 - C) when a species is ready for it.
 - D) because of active attempts at change on the part of a species.
- 5) Psychology's newest approach, _____, emphasizes the importance of adaptation, reproduction, and "survival of the fittest" in shaping behavior.
- A) behavioral psychology
 - B) humanistic psychology
 - C) cognitive psychology
 - D) evolutionary psychology
- 6) According to evolutionary developmental psychologists, many evolved psychological mechanisms are _____. That is, the mechanisms apply only to a specific aspect of a person's psychological makeup.
- A) domain-specific
 - B) maladjusted
 - C) non-operational
 - D) unconditional

- 7) Which of the following statements is true of evolutionary developmental psychology?
- A) Many evolved psychological mechanisms apply only to a specific aspect of a person's psychological makeup.
 - B) The mind is a general-purpose device that can be applied equally to a vast array of problems.
 - C) All behaviors that were adaptive for our prehistoric ancestors serve us well today.
 - D) Evolution has not impacted human development.
- 8) The food-scarce environment of our ancestors likely led to humans' propensity to gorge when food is available and to crave high-caloric foods, a trait that might lead to an epidemic of obesity when food is plentiful. This illustrates how
- A) socialization influences the development of behavior and cognitive skills in human beings.
 - B) evolved mechanisms are not always adaptive in contemporary society.
 - C) organisms pass on characteristics they acquire during their lifetime to their offspring.
 - D) the benefits of evolutionary selection decrease with age.
- 9) According to life-span developmentalist Paul Baltes (2003), the benefits conferred by evolutionary selection _____ with age.
- A) increase
 - B) stay the same
 - C) decrease
 - D) fluctuate
- 10) In the context of evolution and life-span development, which of the following statements is true of Paul Baltes (2003)?
- A) He believed natural selection weeded out all nonadaptive characteristics appearing among older adults.
 - B) He held that the benefits conferred by evolutionary selection increased with age.
 - C) He believed natural selection occurred primarily during the first half of life.
 - D) He held that natural selection operated on characteristics tied to mental fitness.
- 11) According to life-span developmentalist Paul Baltes (2003), the benefits conferred by evolutionary selection decrease with age. Natural selection has not weeded out many harmful conditions and nonadaptive characteristics that appear among older adults. Why?
- A) Degeneration aids in the transmission of desirable traits to future generations.
 - B) Natural selection operates primarily on characteristics that are tied to reproductive fitness.
 - C) Human evolution has no effect on previous generations.
 - D) Evolved mechanisms are always adaptive in contemporary society.
- 12) Paul Baltes says that natural selection among humans operates mainly during the _____ of life.
- A) second half
 - B) last years
 - C) first half
 - D) first year

13) In the context of evolutionary psychology, Albert Bandura (1998) acknowledged that

- A) "one-sided evolutionism" is primarily used to explain social behavior.
- B) evolutionary pressures created changes in biological structures.
- C) evolution dictated behavior.
- D) social behavior is strictly a product of evolved biology.

14) According to Paul Baltes, as the benefits of evolutionary selection decrease with age, the need for _____ increases.

- A) environmental pressure
- B) reproduction
- C) job training
- D) culture

15) As an alternative to "_____ evolutionism" presented in evolutionary psychology, Albert Bandura proposed a _____ view.

- A) bidirectional; unidirectional
- B) one-sided; bidirectional
- C) dynamic; linear
- D) balanced; biased

16) A fertilized human egg cannot grow into a crocodile, duck, or fish specifically because of

- A) social influence.
- B) environmental influence.
- C) adaptive behavior.
- D) genetic code.

17) _____ is a complex molecule with a double helix shape, like a spiral staircase, and contains genetic information.

- A) RNA
- B) A chromosome
- C) DNA
- D) A ribosome

18) _____, the units of hereditary information, are short segments of deoxyribonucleic acid (DNA). They help cells to reproduce themselves and to assemble proteins.

- A) Genes
- B) Chromosomes
- C) RNA
- D) Ribosomes

19) The nucleus of each human cell contains _____, which are threadlike structures made up of deoxyribonucleic acid (DNA).

- A) mitochondria
- B) ribosomes
- C) chromosomes
- D) mesosomes

20) _____ are the building blocks of cells as well as the regulators that direct the body's processes.

- A) Genes
- B) Proteins
- C) Ribosomes
- D) DNA

21) Adam, who has a cardiovascular disease, participated in a research study to identify genetic variations linked to cardiovascular disease. His DNA, along with DNA from other patients suffering from the same cardiovascular disease, was obtained. For the purpose of comparison, the researchers also took DNA samples from participants who did not have the disease. Each participant's DNA was assessed to determine markers of genetic variation. The researchers found that genetic variations occurred more frequently in people who had the cardiovascular disease. This led them to pinpoint the region in the human genome linked to the disease. Which of the following approaches to gene identification and discovery did the researchers use in this study?

- A) next-generation sequencing
- B) linkage analysis
- C) the Thousand Genomes Project
- D) the genome-wide association method

22) In the context of approaches to gene identification and discovery, _____, in which the goal is to discover the location of a gene (or genes) in relation to a marker gene (whose position is already known), is often used to search for disease-related genes.

- A) the Thousand Genomes Project
- B) genome-wide association
- C) linkage analysis
- D) next-generation sequencing

23) In the context of approaches to gene identification and discovery, _____ refers to the vast increase in genetic data generated at a much reduced cost and in a much shorter period than in the past.

- A) next-generation sequencing
- B) linkage analysis
- C) the Thousand Genomes Project
- D) the genome-wide association method

24) Which of the following statements is true of the activity of genes?

- A) Genes are not collaborative.
- B) A single gene codes for a single, specific protein.
- C) Genetic expression is unaffected by environmental factors.
- D) Events that occur inside of the cell can excite or inhibit genetic expression.

- 25) Scientists have found that certain genes become turned on or off as a result of exercise mainly through a process called _____, in which tiny atoms attached themselves to the outside of a gene.
- A) genotyping
 - B) methylation
 - C) glycolysis
 - D) hydroxylation
- 26) Meiosis is a specialized form of cell division that occurs to form
- A) split zygotes.
 - B) extra chromosomes.
 - C) somatic cells.
 - D) eggs and sperm.
- 27) _____ is a stage in reproduction whereby an egg and a sperm fuse to create a single cell.
- A) Fertilization
 - B) Osmosis
 - C) Meiosis
 - D) Mitosis
- 28) During the process of _____, a cell's nucleus—including the chromosomes—duplicates itself and the cell divides, resulting in the formation of two cells.
- A) meiosis
 - B) osmosis
 - C) fertilization
 - D) mitosis
- 29) A cell that contains 46 chromosomes arranged in 23 pairs undergoes the process of _____ to produce two new cells, each containing the same DNA as the original cell, arranged in the same 23 pairs of chromosomes.
- A) mitosis
 - B) osmosis
 - C) meiosis
 - D) fertilization
- 30) Which of the following is true of mitosis?
- A) Mitosis is the cellular reproduction that occurs to form the sperm and the egg cells.
 - B) Mitosis results in the formation of four new cells.
 - C) Mitosis results in the formation of two new cells with 23 pairs of chromosomes.
 - D) Mitosis results in the formation of three new cells.
- 31) A cell that contains 23 pairs of chromosomes divides by mitosis to form two new cells. How many pairs of chromosomes does each new cell contain?
- A) 12
 - B) 23
 - C) 6
 - D) 48

- 32) Except for the sperm and the egg, all cells in the human body have _____ chromosomes.
- A) 10
 - B) 32
 - C) 23
 - D) 46
- 33) During _____, a cell of the testes in men or ovaries in women duplicates its chromosomes and then divides twice, thus forming four cells, each of which has only half the genetic material of the parent cell.
- A) meiosis
 - B) mitosis
 - C) osmosis
 - D) fertilization
- 34) In human beings, by the end of meiosis, each egg or sperm has _____ chromosomes.
- A) 46 paired
 - B) 23 unpaired
 - C) 23 paired
 - D) 46 unpaired
- 35) During fertilization, an egg and a sperm fuse to create a single cell called a _____.
- A) blastocyst
 - B) fetus
 - C) gamete
 - D) zygote
- 36) Sasha's 23rd chromosome pair contains two X chromosomes. This indicates that Sasha
- A) has Down syndrome.
 - B) has fragile X syndrome.
 - C) is a female.
 - D) is a male.
- 37) Jule's 23rd chromosome pair consists of an X chromosome and a Y chromosome. This indicates that Jule
- A) has Down syndrome.
 - B) has XYY syndrome.
 - C) is a female.
 - D) is a male.
- 38) Combining the genes of two parents in offspring increases _____ in the population, which is valuable for a species because it provides more characteristics for natural selection to operate on.
- A) the number of males
 - B) the number of females
 - C) genetic variability
 - D) genetic uniformity

39) _____ develop from a single zygote that splits into two genetically matching replicas, each of which becomes a person.

- A) Triplets
- B) Identical twins
- C) Fraternal twins
- D) Quadruplets

40) Melody and Harmony are identical twins. This means that they developed from

- A) a single egg that was fertilized by a single sperm.
- B) a single egg that was fertilized by two different sperms.
- C) two eggs that were fertilized by a single sperm.
- D) two eggs that were fertilized by two different sperms.

41) Jerome and Tyrone are fraternal twins. This means that they developed from

- A) a single egg that was fertilized by a single sperm.
- B) a single egg that was fertilized by two different sperms.
- C) two eggs that were fertilized by a single sperm.
- D) two eggs that were fertilized by two different sperms.

42) A mistake by the cellular machinery, or damage from an environmental agent such as radiation, may produce a _____, which is a permanently altered segment of DNA.

- A) susceptibility gene
- B) vulnerability gene
- C) longevity gene
- D) mutated gene

43) _____ genes are those that make an individual more vulnerable to specific diseases or accelerated aging.

- A) Susceptibility
- B) Longevity
- C) Vulnerability
- D) Mutated

44) Ethel is 50 years old but appears much more aged. Most of Ethel's relatives have not lived past the age of 60. Which of the following genes are responsible for the accelerated aging observed in Ethel and her family members?

- A) susceptibility genes
- B) longevity genes
- C) vulnerability genes
- D) mutated genes

45) _____ genes are those that make an individual less vulnerable to certain diseases and more likely to live to an older age.

- A) Susceptibility
- B) Longevity
- C) Vulnerability
- D) Mutated

46) Erin, a 90-year-old, is healthy and leads an active lifestyle. Most of her relatives have lived to an old age. Researchers have found that Erin's family carries genes related to stress resistance, immunity, and metabolism that help extend life by repairing and protecting body tissues. In this scenario, which of the following genes is most likely responsible for Erin living to an old age?

- A) susceptibility genes
- B) longevity genes
- C) complimentary genes
- D) mutated genes

47) Carla is diagnosed with breast cancer. She informs her doctor that her mother and her grandmother have also had breast cancer. The doctor explains to Carla that she has specific genes that make her more vulnerable to breast cancer and that she is genetically predisposed to develop the disease. In this scenario, these genes are known as

- A) susceptibility genes.
- B) conditional lethal genes.
- C) complementary genes.
- D) duplicate genes.

48) While studying a sample for height differences, researchers observed that the height of the participants varied significantly regardless of whether the participants' parents were short or tall. This suggests that the physical characteristic of height is most likely an example of

- A) niche-picking.
- B) X-linked inheritance.
- C) genetic imprinting.
- D) polygenic inheritance.

49) Emma and Anna are identical twins who were adopted by different families a few weeks after their birth. Although genetically identical, they grew up with different physical and psychological characteristics. For example, though both inherited a tendency to grow large, Anna was slim and athletic because of the active lifestyle practiced in her adoptive family. This variability can be explained by how

- A) each zygote is unique.
- B) longevity genes can make an individual less vulnerable to certain diseases.
- C) for each genotype, a range of phenotypes can be expressed.
- D) mutated genes can be a source of genetic variability.

- 50) Vanda's genetic heritage comprising her actual genetic material makes up her
- A) phenotype.
 - B) metabolome.
 - C) genotype.
 - D) proteome.
- 51) _____ is the way an individual's genotype is expressed in observed and measurable characteristics.
- A) RNA
 - B) DNA
 - C) A phenotype
 - D) A stereotype
- 52) Marly describes her friend Gina as having blond hair, green eyes, and fair skin with freckles. Marly has described Gina's
- A) genotype.
 - B) genetic imprint.
 - C) phenotype.
 - D) X-linked inheritance.
- 53) Phenotypes include _____ and _____ characteristics.
- A) physical; environmental
 - B) conscious; subconscious
 - C) biological; ecological
 - D) physical; psychological
- 54) For each genotype, a range of _____ can be expressed, thus providing a source of variability.
- A) genetic imprints
 - B) phenotypes
 - C) karyotypes
 - D) monotypes
- 55) In some cases of genotypic expression, one gene of a pair always exerts its effects overriding the potential influence of the other gene. This is the _____ principle.
- A) sex-linked genes
 - B) dominant-recessive genes
 - C) genetic imprinting
 - D) polygenic inheritance
- 56) Clark's eyes are brown in color. However, both his parents have eyes that are blue in color. According to the dominant-recessive genes principle, the most likely reason for Clark's eyes being brown in color is that
- A) Clark's grandparents had brown-colored eyes.
 - B) Clark has a mutation in his genotype resulting in the change in eye color.
 - C) Clark's family history shows that the family has a dominant gene for brown-colored eyes.
 - D) Clark's parents are carriers of genes contributing to brown eyes.

- 57) Carla has brown hair, and her husband also has brown hair. However, Carla's son is born with blond hair. This most likely indicates that Carla's son
- A) inherited the dominant genes for blond hair.
 - B) inherited the recessive genes for blond hair.
 - C) has a susceptibility gene.
 - D) has a longevity gene.
- 58) Carrie's parents have brown hair. However, Carrie gets genes for blond hair from both of her parents, and as a result she has blond hair. This indicates that the gene for blond hair is a
- A) recessive gene.
 - B) dominant gene.
 - C) susceptibility gene.
 - D) longevity gene.
- 59) A(n) _____ gene overrides the potential influence of a recessive gene.
- A) longevity
 - B) dominant
 - C) susceptible
 - D) aggressive
- 60) A recessive gene exerts its influence only if both genes of a pair are
- A) recessive.
 - B) complementary.
 - C) conditional lethals.
 - D) dominant.
- 61) Females who have one abnormal copy of a mutated gene on the X chromosome are known as
- A) inhibitors.
 - B) patients.
 - C) carriers.
 - D) promoters.
- 62) Most individuals who have X-linked diseases are males because
- A) males have only one copy of the X chromosome.
 - B) the diseases are triggered by the male sex hormone, testosterone.
 - C) males have an extra Y chromosome.
 - D) males have an extra X chromosome, making them XXY.
- 63) Which of the following conditions is due to an X-linked inheritance?
- A) Beckwith-Wiedemann syndrome
 - B) hemophilia
 - C) Wilms tumor
 - D) diabetes

- 64) _____ occurs when the expression of a gene has different effects depending on whether the mother or the father passed on the gene.
- A) Polygenic inheritance
 - B) X-linked inheritance
 - C) Genetic imprinting
 - D) Y-linked inheritance
- 65) Beckwith-Wiedemann syndrome is a growth disorder that is most likely a result of _____ gone awry.
- A) genetic imprinting
 - B) polygenic inheritance
 - C) sex-linked genes
 - D) chromosomes
- 66) Genetic testing has found that Gary, Ben, Tara, and Matt all carry a copy of a gene for hemophilia. However, Tara, who is the only female out of the four, does not show any signs of the disease, whereas Gary, Ben, and Matt have developed the disease. In this scenario, it can be inferred that hemophilia is most likely a(n)
- A) X-linked disease.
 - B) sex-linked chromosomal abnormality.
 - C) gene-linked abnormality.
 - D) autosomal dominant disorder.
- 67) Which of the following is an example of a chromosomal abnormality that occurs when whole chromosomes do not separate properly during meiosis?
- A) Down syndrome
 - B) hemophilia
 - C) Huntington's disease
 - D) sickle-cell anemia
- 68) Jason, a 4-year-old, has an intellectual disability and has shorter limbs than other children his age. His pediatrician observes that Jason has a protruding tongue and an extra fold of skin over his eyelids. Jason's mother informs the pediatrician that she was 30 at the time of Jason's birth and that he was born with a flat skull. From this information, the pediatrician will most likely diagnose Jason with
- A) Turner syndrome.
 - B) Klinefelter syndrome.
 - C) Down syndrome.
 - D) XYY syndrome.
- 69) Which of the following is true of Down syndrome?
- A) It primarily occurs in African American children.
 - B) It occurs when genetic imprinting goes awry.
 - C) Its symptoms include retardation of motor and mental abilities.
 - D) It is caused by the presence of an extra copy of chromosome Y.

70) Which of the following women has the highest probability of giving birth to a child with Down syndrome?

- A) Sarah, a 21-year-old Asian woman
- B) Jane, a 41-year-old Euro-American woman
- C) Ella, a 27-year-old African American woman
- D) Destiny, a 38-year-old African American woman

71) Human embryos must possess _____ to be viable.

- A) at least one X chromosome
- B) two Y chromosomes
- C) at least one Y chromosome
- D) three Y chromosomes

72) Timothy's wife is having trouble conceiving a child despite reports on her reproductive fitness being normal. However, on examining Timothy, the doctor determines that his testes are undeveloped, and that he has enlarged breasts. He also observes that Timothy is unusually tall, although his parents and grandparents are of short stature. The doctor informs Timothy that these symptoms are due to Timothy having an extra X chromosome, making him XXY instead of XY. Timothy most likely suffers from

- A) Down syndrome.
- B) Fragile X syndrome.
- C) Klinefelter syndrome.
- D) Turner syndrome.

73) Tristan has a genetic disorder because of which he has an intellectual disability. His mother informs Tristan's pediatrician that Tristan has an extremely short attention span for any task. Based on Tristan's symptoms, the pediatrician is most likely to diagnose Tristan with

- A) Fragile X syndrome.
- B) XYY syndrome.
- C) Turner syndrome.
- D) Tay-Sachs disease.

74) Which of the following is true of fragile X syndrome?

- A) It occurs more frequently in males than in females.
- B) It occurs only in females.
- C) It makes a female XO instead of XX.
- D) It results in XXY males.

75) Harry is an autistic child and has a short attention span for any task. His intellectual abilities are much lower than other children his age. His pediatrician reveals that Harry has a genetic disorder due to an abnormality in his X chromosome, which has become constricted. Harry most likely suffers from

- A) Turner syndrome.
- B) Fragile X syndrome.
- C) XYY syndrome.
- D) Klinefelter syndrome.

76) Natasha has a short stature, although everyone in her family is tall. Unlike her family members and relatives, she has a webbed neck. She dislikes mathematics as she has difficulty understanding the subject. However, she takes part in and enjoys activities that require verbal communication. Natasha's doctor informs her parents that she is missing an X chromosome, making her XO instead of XX. The symptoms and the cause of the symptoms most likely indicate that Natasha has _____.

- A) Fragile X syndrome
- B) XYY syndrome
- C) Klinefelter syndrome
- D) Turner syndrome

77) Sandra excels in reading and spelling but struggles with mathematics. She is shorter than her peers and has a webbed neck. Her doctor has determined that she has one X chromosome missing. Sandra most likely has

- A) XYY syndrome.
- B) Fragile X syndrome.
- C) Turner syndrome.
- D) XXO syndrome.

78) Which of the following statements about Turner syndrome is true?

- A) Turner syndrome occurs exclusively in females.
- B) People with Turner syndrome have extremely poor verbal ability.
- C) Males with Turner syndrome are short in stature and have webbed necks.
- D) Turner syndrome occurs in approximately 1 of every 25,000 live female births.

79) Which of the following is most likely a characteristic of persons with Klinefelter syndrome?

- A) They have undeveloped testes.
- B) They are usually short in stature.
- C) They usually have small breasts.
- D) They have an extra fold of skin over their eyelids.

80) Brianna goes to a doctor who specializes in identifying genetic flaws to help prevent the risk of abnormalities. This doctor is called

- A) a genealogist.
- B) a genetic counselor.
- C) a chromosomal advisor.
- D) a physiologist.

81) Phenylketonuria (PKU) is a genetic disorder in which an individual cannot properly metabolize _____, an amino acid.

- A) phenylamine
- B) phenylalanine
- C) phenylacetylene
- D) phenylacetamide

82) Which of the following is true of phenylketonuria?

- A) It results from a recessive gene.
- B) It is a chromosomal disorder.
- C) It results in death by the age of five.
- D) It is caused by an accumulation of lipids in the nervous system.

83) Mateo, an infant, is on a special diet as his parents are aware that he has a genetic disorder in which he cannot metabolize phenylalanine, an amino acid. Mateo's parents are also aware of the importance of this diet and that excess phenylalanine buildup in the infant will produce intellectual disability and hyperactivity. This genetic disorder results from a

- A) dominant gene.
- B) recessive gene.
- C) complementary gene.
- D) longevity gene.

84) Which of the following is a gene-linked abnormality?

- A) Down syndrome
- B) Phenylketonuria (PKU)
- C) Turner syndrome
- D) Klinefelter syndrome

85) Tamara, an African American, is born with a genetic disorder that causes her body's red blood cells to become hook shaped instead of being disk shaped, impairing the normal oxygen-carrying capacity of the cells. The doctors explain to Tamara's parents that this condition, however, makes her resistant to malaria. Which of the following disorders is Tamara most likely suffering from?

- A) Tay-Sachs disease
- B) Sickle-cell anemia
- C) Leukemia
- D) Huntington's disease

86) _____ is a genetic abnormality in which delayed blood clotting causes internal and external bleeding.

- A) Hemophilia
- B) Phenylketonuria
- C) Sickle-cell anemia
- D) Tay-Sachs disease

87) Paul has a gene-linked abnormality, and as a result he suffers from an X-linked inheritance disease. Because of this disease, Paul suffers from internal and external bleeding due to delayed blood clotting. Which of the following will effectively treat Paul's condition?

- A) Hydroxyurea
- B) Blood transfusions
- C) Anticoagulants
- D) Blood irradiation therapy

88) Samantha is diagnosed with a genetic disorder. She suffers from glandular dysfunction that hinders mucus production. She has difficulty in breathing, and her digestion is hampered. She also has frequent lung infections and suffers from shortness of breath. In this scenario, which of the following genetic disorders is Samantha most likely suffering from?

- A) Cystic fibrosis
- B) Huntington's disease
- C) Phenylketonuria
- D) Tay-Sachs disease

89) _____ is a gene-linked abnormality in which the central nervous system deteriorates, producing problems in muscle coordination and mental deterioration.

- A) Cystic fibrosis
- B) Phenylketonuria
- C) Huntington's disease
- D) Tay-Sachs disease

90) Which of the following would be an appropriate course of treatment for a person diagnosed with cystic fibrosis?

- A) Medication for pain, antibiotics, blood transfusions, and hydroxyurea
- B) Insulin treatment
- C) Blood transfusions/injection
- D) Physical and oxygen therapy, synthetic enzymes, and antibiotics

91) Mary and Jim are expecting a child. During prenatal diagnostic testing, the doctor confirms that the fetus has a genetic abnormality that will lead to a neural tube disorder causing brain and spine abnormalities. He also tells the parents that the baby will most likely have protruding tissue, especially from the lower back, and that the abnormality can be treated with corrective surgery at birth, orthopedic devices, and physical or medical therapy. Which of the following disorders is Mary and Jim's child suffering from?

- A) Spina bifida
- B) Tay-Sachs disease
- C) Phenylketonuria
- D) Huntington's disease

92) Lindsay's body does not produce enough insulin, causing abnormal metabolism of sugar. She is receiving insulin treatment. Lindsay has

- A) spina bifida.
- B) hemophilia.
- C) phenylketonuria.
- D) diabetes.

93) Joshua, a two-year-old, has been diagnosed with _____, a blood disorder that limits the body's oxygen supply and can cause joint swelling and heart and kidney failure. This genetic disorder can be treated through penicillin, pain medication, antibiotics, blood transfusions, and hydroxyurea.

- A) spina bifida
- B) Tay-Sachs disease
- C) sickle-cell anemia
- D) Huntington's disease

94) Benny has been diagnosed with a gene-linked abnormality characterized by deceleration of mental and physical development caused by an accumulation of lipids in the nervous system. He has been put on medication and a special diet, but his family has been told that he will probably not live beyond the age of five. Benny is suffering from

- A) spina bifida.
- B) Tay-Sachs disease.
- C) phenylketonuria.
- D) Huntington's disease.

95) Gwendolyn, a pregnant woman, is undergoing a prenatal medical procedure in which her doctor directs high-frequency sound waves into her abdomen to create a visual representation of the fetus's inner structures. The doctor informs her that the procedure will reveal the number of fetuses she is carrying, detect abnormalities in the fetus, and give clues to the sex of the baby. In this scenario, which of the following prenatal medical procedures is Gwendolyn most likely undergoing?

- A) Chorionic villus sampling
- B) Triple screen
- C) Amniocentesis
- D) Ultrasound sonography

96) _____ refers to an abnormally small brain of a fetus that can lead to intellectual disability.

- A) Spina bifida
- B) Klinefelter syndrome
- C) Hemophilia
- D) Microencephaly

97) _____ uses a powerful magnet and radio images to generate detailed images of the body's organs and structures.

- A) Triple screen
- B) MRI
- C) Ultrasound sonography
- D) Amniocentesis

98) Esperanza, who is in the 11th week of her pregnancy, is undergoing a prenatal diagnostic test that involves the removal of a small sample of the placenta. The doctor informs her that the test may detect any genetic defects and chromosomal abnormalities in the fetus and that she will have to wait for at least 10 days for the diagnosis. In this scenario, which of the following prenatal medical procedures is Esperanza most likely undergoing?

- A) Chorionic villus sampling (CVS)
- B) Amniocentesis
- C) Noninvasive prenatal diagnosis (NIPD)
- D) Triple screen

99) Which of the following is the vascular organ that links the fetus to the mother's uterus?

- A) the fallopian tube
- B) the ovary
- C) the placenta
- D) the cervix

100) Identify a risk related to the use of chorionic villus sampling (CVS) as a prenatal diagnostic test.

- A) limb deformity
- B) spina bifida
- C) down syndrome
- D) mental retardation

101) Amniocentesis brings a small risk of

- A) mental retardation.
- B) limb deformity.
- C) miscarriage.
- D) Down syndrome.

102) Which of the following statements regarding chorionic villus sampling (CVS) and amniocentesis is true?

- A) Both CVS and amniocentesis provide valuable information about the presence of birth defects.
- B) Both CVS and amniocentesis increase the risk of miscarriage.
- C) Both CVS and amniocentesis increase the risk of limb deformities in the fetus.
- D) Amniocentesis allows a decision on abortion to be made sooner than CVS.

103) The current maternal blood screening test is called the triple screen because

- A) it is performed three times.
- B) it diagnoses three diseases.
- C) it measures three substances in the mother's blood.
- D) it is the third prenatal diagnostic test performed in a pregnancy.

104) Don and Ellie are trying to conceive a baby. How long should they wait before they suspect infertility?

- A) 3 months
- B) 12 months
- C) 18 months
- D) 24 months

105) Which of the following is most likely to be a cause of infertility in a woman?

- A) unblocked fallopian tubes
- B) increased muscle mass
- C) eggs lacking motility
- D) a disease that hinders the implantation of the embryo into the uterus

106) By far the most common high-tech assisted reproduction technique used is

- A) artificial insemination.
- B) in vitro fertilization.
- C) spermatogenesis.
- D) in vivo fertilization.

107) David and Kelly are seeking help for infertility. Under their physician's guidance, they decide to undergo a procedure in which Kelly's eggs are combined in a laboratory dish with her husband's sperms. What is this procedure called?

- A) gamete transfer
- B) intracytoplasmic sperm injection
- C) zygote intrafallopian transfer
- D) in vitro fertilization

108) Which of the following is the main risk factor that a couple must be aware of when undergoing fertility treatments?

- A) high birth weight in babies conceived through such treatments
- B) an increase in the possibility of multiple births when such treatments are used
- C) negative psychological impact on children conceived through such treatments
- D) significant differences in developmental outcomes for children conceived through such treatments

109) _____ is a social and legal process by which a parent-child relationship is established between persons unrelated at birth.

- A) Kinship care
- B) Rebirthing
- C) Guardianship
- D) Adoption

110) Which of the following statements is true about adopted children?

- A) Nonadopted children are more likely to experience school-related problems than adopted children.
- B) Children who are adopted early in life are more likely to have positive outcomes than those adopted later in life.
- C) Adopted children should never be allowed to meet their birth parents.
- D) Most adopted children struggle with school, peer relationships, and self-esteem.

111) _____ is the field that seeks to discover the influence of heredity and environment on individual differences in human traits and development.

- A) Behavior influence
- B) Behavior therapy
- C) Behavior genetics
- D) Behavior development

112) In twin studies, it is most common to

- A) assess the behavioral similarity of identical twins compared with the behavioral similarity of non-twin siblings.
- B) determine the behavioral similarity of identical twins compared with the behavioral similarity of fraternal twins.
- C) to conduct genetic studies of the difference between identical twins in their genetic makeup.
- D) to compare adopted fraternal twins with each other.

113) Rachel loves to read books, and she also encourages her daughter to read by regularly taking her to the local library and buying her lots of books. Rachel's daughter is now an avid reader. This reflects a(n) _____ correlation.

- A) passive genotype-environment
- B) evocative genotype-environment
- C) influential genotype-environment
- D) active (niche-picking) genotype-environment

114) Tracy's parents are avid sports fans. Since she was a child, they took her to numerous baseball and football games, and Tracy regularly watched the sports channel with her dad. When she was old enough, her parents made her join the little league team at her school and she performed well. This is an example of a(n)

- A) evocative genotype-environment correlation.
- B) active (niche-picking) genotype-environment correlation.
- C) passive genotype-environment correlation.
- D) gene-gene correlation.

115) _____ correlations occur because a child's genetically influenced characteristics elicit certain types of environments.

- A) Passive genotype-environment
- B) Evocative genotype-environment
- C) Influential genotype-environment
- D) Active (niche-picking) genotype-environment

116) Charlie is a cooperative, attentive child and is a favorite at home and school; he receives positive, instructive responses from adults. This is indicative of a(n)

- A) passive genotype-environment correlation.
- B) evocative genotype-environment correlation.
- C) influential genotype-environment correlation.
- D) active (niche-picking) genotype-environment correlation.

117) Timothy is a shy 6-year-old who is usually withdrawn in class. He is always distracted in class and refuses to cooperate with other students during class activities. He does not volunteer to answer questions, and as his teachers find it difficult to elicit any response from him, they choose to ignore him. He is not liked by his classmates as he never shares his belongings. As a result, he mostly plays by himself. According to Sandra Scarr's description of the three ways that heredity and environment can be correlated, which of the following correlations is most likely exhibited in this scenario?

- A) passive genotype-environment correlation
- B) active genotype-environment correlation
- C) niche-picking genotype-environment correlation
- D) evocative genotype-environment correlation

118) Brad is an athletic child, and he is in every sports team in school as he enjoys sports immensely. He regularly practices football, tennis, and basketball and hopes to become the captain of one of the sports teams. This scenario most likely reflects _____ correlations that occur when children seek out environments that they find compatible and stimulating.

- A) passive genotype-environment
- B) evocative genotype-environment
- C) active (niche-picking) genotype-environment
- D) influential genotype-environment

119) According to Sandra Scarr's description of the three ways that heredity and environment can be correlated, passive genotype-environment correlations occur because

- A) biological parents provide a rearing environment for a child.
- B) children seek out environments that are stimulating.
- C) a child's genetically influenced characteristics elicit certain types of environments.
- D) certain genes evoke environmental support.

120) Which of the following is an example of a passive genotype-environment correlation?

- A) Uncooperative, distractible children receive more unpleasant and disciplinary action from parents and teachers.
- B) Outgoing children tend to seek out social contexts in which to interact with people.
- C) Parents who have a genetic predisposition to be musically inclined encourage their children to learn how to play a musical instrument.
- D) Infants who smile more receive more attention from the individuals in their social environment.

121) The _____ view states that development is the result of an ongoing, bidirectional interchange between heredity and the environment.

- A) epigenetic
- B) biosocial
- C) sociogenic
- D) congenital

122) _____ is the interaction of a specific measured variation in the DNA and a specific measured aspect of the environment.

- A) Heredity-environment correlation
- B) Evocative genotype-environment correlation
- C) Gene \times environment ($G \times E$) interaction
- D) Passive genotype-environment interaction

123) Name the theorist who published *On the Origin of Species*, in 1859, that outlined his/her theory of natural selection.

124) What is the behavior that promotes an organism's survival in its natural habitat?

125) What is the psychological perspective that emphasizes the importance of adaptation, reproduction, and "survival of the fittest" in shaping human behavior?

126) What is the complex molecule that has a double helix shape and contains genetic information?

127) What are the short segments of DNA that are located on the chromosomes and considered to be the basic units of hereditary information?

128) Cell division occurs in the eggs and sperms. A cell duplicates its chromosomes and divides twice. This leads to the formation of four cells that contain only half of the genetic material of the parent cell. What is this process called?

129) During the early stages of a pregnancy, a single zygote splits into two genetically identical replicas. The genetically identical replicas of the single zygote indicate that the pregnant person will have _____ twins.

130) Xiomarra is tall with dark curly hair and brown eyes. She is outgoing and friendly. The way that Xiomarra's genotype is expressed in these observable characteristics is referred to as her _____.

131) Sherry, a 3-year-old, has an extra copy of chromosome 21. She is often made fun of by other children because of her unusual looks; she has a round face and her skull is flat. She has a protruding tongue, and she finds it difficult to play because of her short limbs. Her parents find that her mental abilities are impaired when compared with other children her age. Sherry is most likely suffering from a chromosomal abnormality called _____.

132) Violet, who is in the 11th week of pregnancy, is undergoing a prenatal medical procedure to detect genetic defects and chromosomal abnormalities in the fetus. During the procedure, her obstetrician removes a small sample of the placenta for analysis. Name the prenatal medical procedure that Violet is undergoing.

133) Name a prenatal medical procedure in which a sample of amniotic fluid is withdrawn by a syringe and tested for chromosomal or metabolic disorders.

134) Yelena is an outgoing person; therefore, people naturally tend to like her and find her personable. According to Scarr-McCartney, which genotype-environment interaction does this best represent?

135) Deshawn believes that development is the result of an ongoing, bidirectional interchange between heredity and environment. He has most likely adopted which theoretical perspective?

136) Explain the genome-wide association method, and how it has been used to help identify genetic variations of diseases.

137) List the four genetic principles. In your opinion, which do you think is the most serious, and why?

138) List four sex-linked chromosomal abnormalities.

139) List five gene-linked abnormalities.

140) Name and describe three prenatal diagnostic tests.

141) What are some of the possible causes of infertility in women and men? Name two strategies that can be used to overcome infertility.

142) Differentiate between open and closed adoption. Analyze the effect of open adoption on the overall development of the adopted child.

143) What are some problems adopted children face at different points of development (infancy, early childhood, middle and late childhood, and adolescence)?

144) Identify and describe the two common studies used by behavior geneticists to investigate the influence of heredity on behavior.

145) What are the three ways that heredity and environment are correlated as described by behavior geneticist Sandra Scarr?

146) Assume that in the case study of the Jim and Jim twins, it was found that their similar development trajectories were a result of similar temperament and interests, which caused them to seek out similar environments that were compatible and stimulating to them. Which heredity-environment correlation is reflected in this scenario?

147) Define gene \times environment ($G \times E$) interaction. Give an example of a study (either your own or one from the book) that could illustrate the interaction between genes and the environment.