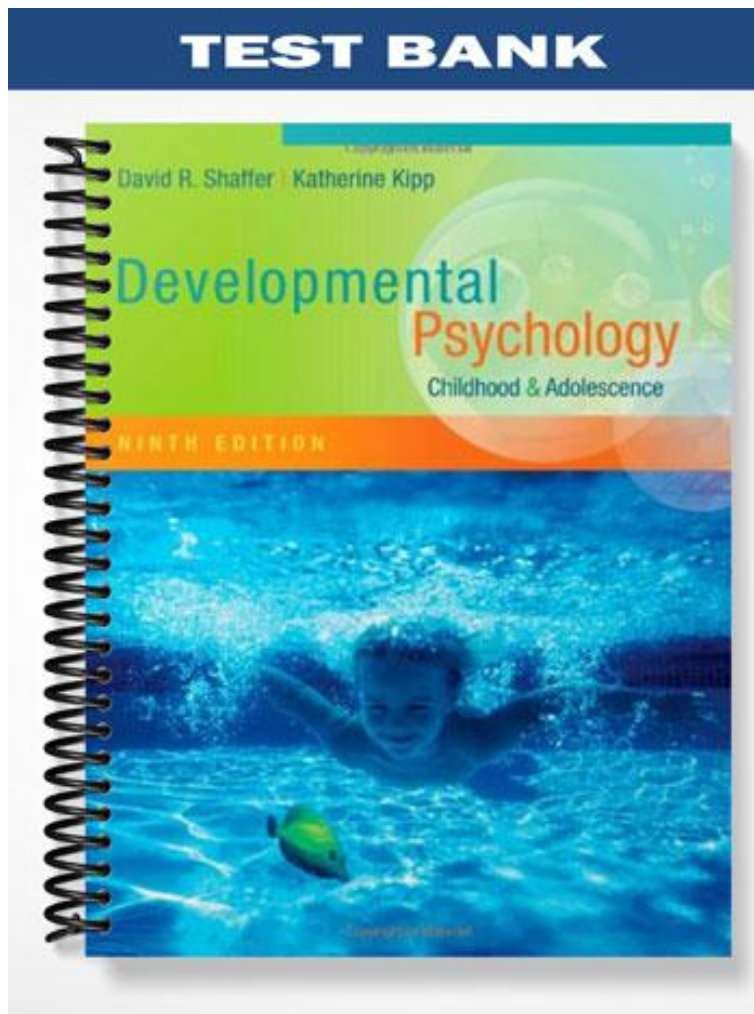


TEST BANK



CHAPTER 2—HEREDITARY INFLUENCES ON DEVELOPMENT

MULTIPLE CHOICE

1. The particular combination of genes that one inherits is one's
 - a. autosome.
 - b. genetic imprint.
 - c. phenotype.
 - d. genotype.

ANS: D DIF: moderate REF: Introductory Section
MSC: Factual

2. The ways in which a person's inherited characteristics are observable or measurable is referred to as
 - a. phenotype.
 - b. genotype.
 - c. shared environmental influence.
 - d. concordance rate.

ANS: A DIF: moderate REF: Introductory Section
MSC: Factual

3. PHENOTYPE is to GENOTYPE as ____ is to ____.
 - a. MASCULINE :: FEMININE
 - b. VISIBLE :: HIDDEN
 - c. SOLITARY :: SOCIAL
 - d. DARKNESS :: LIGHT

ANS: B DIF: difficult REF: Introductory Section
MSC: Conceptual

4. One's ____ develops most directly from inheritance.
 - a. concordance rate
 - b. genotype
 - c. phenotype
 - d. nonshared environmental influence (NSE)

ANS: B DIF: moderate REF: Introductory Section
MSC: Conceptual

5. At conception, all of the following events take place EXCEPT
 - a. a sperm cell penetrates the lining of the ovum.
 - b. a biochemical reaction functions to repel other sperm.
 - c. a new cell nucleus forms around the genetic material provided by father and mother.
 - d. crossing over begins the process of replication.

ANS: D DIF: moderate REF: Principles of Hereditary Transmission
MSC: Conceptual

6. Hereditary information is transmitted from ____ to ____.
- introversion; extraversion.
 - phenotype; genotype.
 - parents; offspring.
 - offspring; parents.

ANS: C DIF: easy REF: Principles of Hereditary Transmission
MSC: Factual

7. Conception involves the
- division of cells via mitosis.
 - study of concordance rates among twins.
 - dominance of some alleles over others.
 - union of sperm and egg.

ANS: D DIF: easy REF: Principles of Hereditary Transmission
MSC: Conceptual

8. NATURE is to NURTURE as ____ is to ____.
- SHARED :: NONSHARED ENVIRONMENTAL EXPERIENCE
 - CONTRACEPTION :: FERTILITY
 - HEREDITY :: ENVIRONMENT
 - RECESSIVE :: DOMINANT

ANS: C DIF: moderate REF: Principles of Hereditary Transmission
MSC: Conceptual

9. The theme of Chapter 2 is best described as
- the dominance of nurture over nature.
 - the dominance of nature over nurture.
 - the complex interplay of nature and nurture.
 - how nature and nurture are moderated by religious belief and religious experience.

ANS: C DIF: moderate REF: Principles of Hereditary Transmission
MSC: Conceptual

10. Which of these presents the correct movement path sequence of the ovum/zygote, from earliest to last?
- Fallopian tube :: ovary :: uterus
 - Ovary :: fallopian tube :: uterus
 - Uterus :: fallopian tube :: ovary
 - Uterus :: ovary :: fallopian tube

ANS: B DIF: moderate REF: Principles of Hereditary Transmission
MSC: Factual

11. The fertilized ovum is identified as a(n)
- zygote.
 - dominant allele.
 - bundle of joy.
 - empathic concern.

ANS: A DIF: moderate REF: Principles of Hereditary Transmission
MSC: Factual

12. The ____ is the earliest developmental stage at which the young organism contains the hereditary material from both mother and father.
- egg
 - embryo
 - zygote
 - fetus

ANS: C DIF: moderate REF: Principles of Hereditary Transmission
MSC: Factual

13. As the zygote moves through the fallopian tube toward the uterus, it
- undergoes little change until after implantation.
 - begins to reproduce itself through the process of meiosis.
 - begins to reproduce itself through the process of mitosis.
 - undertakes such rapid differentiation that by the time of implantation, it already looks quite human.

ANS: C DIF: moderate REF: Principles of Hereditary Transmission
MSC: Factual

14. ____ are tiny threadlike strands of hereditary material found in the nucleus of every cell.
- Zygotes
 - Chromosomes
 - Genetic imprints
 - Alleles

ANS: B DIF: easy REF: Principles of Hereditary Transmission
MSC: Factual

15. Which of these is the correct size sequence of genetic materials, ordered from smallest to largest?
- Chromosome :: DNA :: gene
 - Chromosome :: gene :: DNA
 - DNA :: gene :: chromosome
 - Gene :: chromosome :: DNA

ANS: C DIF: moderate REF: Principles of Hereditary Transmission
MSC: Factual

16. The DNA molecule has a special ability to
- duplicate itself.
 - survive beyond the baby's holistic death.
 - send/receive paranormal psychic information.
 - locate and swim in the direction of an ovum.

ANS: A DIF: moderate REF: Principles of Hereditary Transmission
MSC: Factual

17. The biological process of mitosis is described as the
- "untwisting" of the double helix cell structure.
 - expansive growth via cellular replication.
 - consumption and metabolism of nutrients.
 - decline and gradual death of the cell.

ANS: B DIF: moderate REF: Principles of Hereditary Transmission
MSC: Factual

18. Mitosis is like
- a shark that eats its own tail.
 - lengthening a tablecloth by pulling on one end.
 - making photocopies of a written report.
 - deleting a computer file.

ANS: C DIF: difficult REF: Principles of Hereditary Transmission
MSC: Conceptual

19. The earliest stages of cellular mitosis typically occur
- in the ovaries.
 - in the fallopian tubes.
 - in the uterus.
 - at the moment of birth.

ANS: B DIF: difficult REF: Principles of Hereditary Transmission
MSC: Factual

20. Cellular mitosis
- ends at conception.
 - ends at birth.
 - combines genetic information from both parents.
 - continues throughout the lifespan.

ANS: D DIF: moderate REF: Principles of Hereditary Transmission
MSC: Factual

21. The function of the body's germ cells is to
- communicate messages over long distances.
 - generate either sperm or ova for reproduction.
 - attack and kill bacteria that invade the cell.
 - produce hormones that are dumped into the bloodstream.

ANS: B DIF: moderate REF: Principles of Hereditary Transmission
MSC: Factual

22. What are gametes?
- Chromosomal defects that prevent mitosis
 - Aphrodisiacs (love potions)
 - Medical personnel who deliver babies
 - Female ova or male sperm

ANS: D DIF: moderate REF: Principles of Hereditary Transmission
MSC: Factual

23. Through the process of meiosis, unique new combinations of genetic material are generated during
- range of reaction.
 - crossing over.
 - miscarriage.
 - genetic counseling.

ANS: B DIF: difficult REF: Principles of Hereditary Transmission
MSC: Conceptual

24. MEIOSIS is to MITOSIS as ____ is to ____.
- a. MALE :: FEMALE
 - b. MIXING :: GROWTH
 - c. NORMAL :: DEPRAVED
 - d. NATURE :: NURTURE

ANS: B DIF: difficult REF: Principles of Hereditary Transmission
MSC: Conceptual

25. Each person is genetically unique because of the aftereffects of sexual
- a. phenotypes.
 - b. concordance rates.
 - c. mitosis.
 - d. meiosis.

ANS: D DIF: moderate REF: Principles of Hereditary Transmission
MSC: Factual

26. When does genetic crossing over happen?
- a. Prior to intercourse, when gametes are produced
 - b. During orgasm, the peak event of intercourse
 - c. During conception, when sperm enters the ovum
 - d. Just prior to the moment of birth

ANS: A DIF: difficult REF: Principles of Hereditary Transmission
MSC: Factual

27. Crossing over, an event of meiosis, is like
- a. a politician who switches political parties.
 - b. changing one's sexual orientation.
 - c. falling asleep during a boring lecture.
 - d. shuffling a deck of cards to get unique outcomes.

ANS: D DIF: difficult REF: Principles of Hereditary Transmission
MSC: Conceptual

28. The developing child inherits ____ percent of his or her genes from the father and ____ percent from the mother.
- a. 10; 90
 - b. 50; 50
 - c. 90; 10
 - d. 99; 1

ANS: B DIF: moderate REF: Principles of Hereditary Transmission
MSC: Factual

29. According to the principle of ____, meiosis can result in extreme diversity of genetic outcomes.
- a. independent assortment
 - b. sex-linked inheritance
 - c. selective breeding
 - d. canalization

ANS: A DIF: moderate REF: Principles of Hereditary Transmission
MSC: Conceptual

30. Monozygotic twins are the result of
- two ova, each fertilized by different sperm.
 - the “crossing over” phenomenon.
 - a single fertilized ovum splitting into two zygotes.
 - the process of mitosis.

ANS: C DIF: moderate REF: Principles of Hereditary Transmission
MSC: Factual

31. The only circumstance under which two people will share a genotype is when those two people are
- biological siblings.
 - step-siblings.
 - monozygotic twins.
 - dizygotic twins.

ANS: C DIF: moderate REF: Principles of Hereditary Transmission
MSC: Factual

32. The LEAST genetic variability is found within which pair of relatives?
- Brother and sister
 - Monozygotic twins
 - Wife and husband
 - Grandparent and grandchild

ANS: B DIF: moderate REF: Principles of Hereditary Transmission
MSC: Factual

33. Siblings who ____ share all the same genes.
- have the same biological parents
 - have experienced similar nurturant care
 - developed from the same zygote
 - are exactly the same age

ANS: C DIF: moderate REF: Principles of Hereditary Transmission
MSC: Factual

34. For every 1,000 births, about ____ birth(s) will be of monozygotic twins.
- 1
 - 4
 - 50
 - 300

ANS: B DIF: difficult REF: Principles of Hereditary Transmission
MSC: Factual

35. Sex differences are determined by the
- 23rd pair of human chromosomes.
 - mother’s ovum.
 - process of mitosis.
 - process of implantation.

ANS: A DIF: easy REF: Principles of Hereditary Transmission
MSC: Factual

36. In males, the sex chromosomes consist of
- one X chromosome.
 - two Y chromosomes.
 - two X chromosomes.
 - one X and one Y chromosome.

ANS: D DIF: easy REF: Principles of Hereditary Transmission
MSC: Factual

37. Monozygotic (identical) twins are ____ than dizygotic (fraternal) twins in the population.
- more often male
 - more often female
 - numerically more common
 - numerically less common

ANS: D DIF: moderate REF: Principles of Hereditary Transmission
MSC: Factual

38. Your aunt says with a smile, "Let me show you my karyotype!" She wants to show you a(n)
- ovum, being fertilized in a test tube.
 - picture of her 23 chromosomal pairs.
 - outline chart of which relatives have had genetic defects.
 - phenotype of a canalized trait.

ANS: B DIF: difficult REF: Principles of Hereditary Transmission
MSC: Applied

39. The sex of an embryo is determined by the genetic contribution from the
- father.
 - mother.
 - parent who contributes the dominant gene at site 23.
 - parent who contributes the recessive gene at site 23.

ANS: A DIF: moderate REF: Principles of Hereditary Transmission
MSC: Factual

40. The 22 pairs of chromosomes that are irrelevant to one's sexual identity are called
- canalizers.
 - chorionic villus samples.
 - autosomes.
 - codominators.

ANS: C DIF: moderate REF: Principles of Hereditary Transmission
MSC: Factual

41. A baby's genetic sexual identity is determined when
- the parents pledge to remain faithful to each other.
 - conception occurs.
 - the embryonic stage has been completed.
 - the fetus emerges from the womb during birth.

ANS: B DIF: moderate REF: Principles of Hereditary Transmission
MSC: Factual

42. The genetic characteristics of the ____ determine the baby's sexual identity.
- older siblings
 - father's sperm
 - mother's ovum
 - parents' shared wishes

ANS: B DIF: moderate REF: Principles of Hereditary Transmission
MSC: Factual

43. Nature's principle for genetic sexual identity is,
- "In the absence of any sex chromosome, develop as a girl."
 - "In the absence of a Y-chromosome, develop as a girl."
 - "If the cell has just 23 single chromosomes, develop as a boy."
 - "If the cell lacks any sex chromosomes, develop as a boy."

ANS: B DIF: moderate REF: Principles of Hereditary Transmission
MSC: Conceptual

44. Genes exert their influences on development by
- psychically changing the cell's future actions.
 - managing the production of amino acids necessary for cell development.
 - ensuring that experiential factors solely affect the child's development.
 - causing cells to wither and die.

ANS: B DIF: moderate REF: Principles of Hereditary Transmission
MSC: Factual

45. Genes have all the following functions EXCEPT
- guiding the differentiation of cells.
 - controlling the pace and timing of development.
 - producing specific amino acids for proteins.
 - determining the content of what is learned.

ANS: D DIF: moderate REF: Principles of Hereditary Transmission
MSC: Conceptual

46. The specific pairs of genes that control a characteristic are
- phenotypes.
 - ranges of reaction.
 - alleles.
 - autosomes.

ANS: C DIF: difficult REF: Principles of Hereditary Transmission
MSC: Factual

47. During the 1800s, Gregory Mendel studied the inheritance of traits that are
- developed via learning.
 - strongly influenced by nutrition.
 - controlled by single pairs of genes.
 - controlled by multiple pairs of genes.

ANS: C DIF: moderate REF: Principles of Hereditary Transmission
MSC: Factual

48. When a trait appears in an all-or-none fashion in the phenotype, then it is known that the trait
- is controlled by a single pair of genes.
 - is controlled by a group of many pairs of genes.
 - develops from learned experience.
 - is influenced by nutritional food intake.

ANS: A DIF: moderate REF: Principles of Hereditary Transmission
MSC: Factual

49. DOMINANT TRAIT is to RECESSIVE TRAIT as ____ is to ____ in phenotypes.
- STRONG :: WEAK
 - COMMON OCCURRENCE :: RARE OCCURRENCE
 - FAVORABLE :: UNFAVORABLE
 - HUMAN :: ANIMAL

ANS: B DIF: difficult REF: Principles of Hereditary Transmission
MSC: Conceptual

50. Mendel's experiments on the inheritance of dominant vs. recessive traits in pea seeds showed that
- the best traits tend to be dominant.
 - the worst traits tend to be dominant.
 - humans inherit traits from the foods they eat.
 - the offspring's traits are not merely blends of the parents' traits.

ANS: D DIF: moderate REF: Principles of Hereditary Transmission
MSC: Conceptual

51. One notion of biological inheritance is that traits of the two parents are blended, like mixing paint colors, to form the phenotypic traits of the offspring. This notion was ____ Mendel's experimental results with peas.
- disconfirmed by
 - unrelated to
 - supported by
 - developed from

ANS: A DIF: moderate REF: Principles of Hereditary Transmission
MSC: Conceptual

52. A recessive trait will appear in the offspring's phenotype when its allele is inherited from
- the mother only.
 - the father only.
 - neither mother nor father.
 - both father and mother.

ANS: D DIF: moderate REF: Principles of Hereditary Transmission
MSC: Conceptual

53. For traits that are determined by single pairs of genes, recessive traits occur on population phenotypes _____ than those of dominant traits.
- more often
 - equally often
 - less often
 - with weaker strength

ANS: C DIF: moderate REF: Principles of Hereditary Transmission
MSC: Conceptual

54. A person who carries two dominant or two recessive genes is said to be _____ for that trait.
- heterozygous
 - homozygous
 - codominant
 - corecessive

ANS: B DIF: moderate REF: Principles of Hereditary Transmission
MSC: Factual

55. When a person is homozygous for an inherited trait, the alleles inherited from mother and father are
- one recessive and the other dominant.
 - both the same.
 - for homosexual orientation.
 - unlikely to be expressed in the phenotype.

ANS: B DIF: moderate REF: Principles of Hereditary Transmission
MSC: Conceptual

56. Two parents whose phenotypes both show a dominant trait will have a child who shows the recessive version of the trait
- under no circumstances.
 - only if one of the parents has a genetic defect.
 - if the child receives the recessive allele from both parents.
 - with complete certainty.

ANS: C DIF: moderate REF: Principles of Hereditary Transmission
MSC: Conceptual

57. Brown eyes are dominant over blue eyes. Two brown-eyed parents could have a blue-eyed child
- never, under any circumstances.
 - if a blue-eyed allele is inherited from the mother.
 - if a blue-eyed allele is inherited from the father.
 - if a blue-eyed allele is inherited from both parents.

ANS: D DIF: moderate REF: Principles of Hereditary Transmission
MSC: Applied

58. Brown eyes are dominant over blue eyes. Suppose that two brown-eyed parents gave birth to a blue-eyed child. It may be inferred that
- a man other than the husband is the father of the child.
 - the husband is the father, but the wife is not the mother.
 - both parents are homozygous for brown eyes.
 - both parents are heterozygous for brown/blue eyes.

ANS: D DIF: difficult REF: Principles of Hereditary Transmission
MSC: Applied

59. One trait that illustrates the concept of simple dominant/recessive inheritance is
- color blindness.
 - AB blood type.
 - nearsightedness.
 - intelligence.

ANS: C DIF: difficult REF: Principles of Hereditary Transmission
MSC: Factual

60. One trait that illustrates the principle of codominance is
- AB blood type.
 - Down syndrome.
 - color blindness.
 - diabetes.

ANS: A DIF: difficult REF: Principles of Hereditary Transmission
MSC: Factual

61. Genetic codominance
- was shown by Mendel's experiments with pea seeds.
 - follows the simple pattern of dominance/recessiveness.
 - may permit each allele to be expressed in the phenotype.
 - only produces "invisible traits" that are not shown in any phenotypes.

ANS: C DIF: moderate REF: Principles of Hereditary Transmission
MSC: Conceptual

62. When a genetic trait is influenced by heterozygous codominant alleles,
- only the dominant allele is expressed in the phenotype.
 - only the recessive allele is expressed in the phenotype.
 - both alleles may be partially expressed.
 - only the effects of learned experience will become evident in the phenotype.

ANS: C DIF: difficult REF: Principles of Hereditary Transmission
MSC: Conceptual

63. Children of mixed race often have skin that is lighter than one parent's and darker than the other parent's. This outcome is consistent with the genetic principle of
- sex-linked characteristics.
 - genetic mutation and crossing over.
 - recessive Mendelian traits.
 - codominance of traits.

ANS: D DIF: difficult REF: Principles of Hereditary Transmission
MSC: Conceptual

64. Codominance of genetic traits is like
- mixing paint pigments to get a halfway blend.
 - either winning or losing a coin toss.
 - being unable to see what clothes are worn beneath an outer garment.
 - walking on a treadmill but getting nowhere.

ANS: A DIF: difficult REF: Principles of Hereditary Transmission
MSC: Conceptual

65. ____ is a codominant recessive trait for which, in heterozygous persons, the recessive trait is partially expressed in the phenotype, causing a person's red blood cells to assume an unusual crescent shape.
- Cystic fibrosis
 - Albinism
 - Tay-Sachs disease
 - Sickle-cell anemia

ANS: D DIF: difficult REF: Principles of Hereditary Transmission
MSC: Factual

66. Sickle-cell anemia is a severe blood disorder that causes massive clustering of red blood cells, which results in
- lung disease.
 - sever motor problems.
 - mental retardation.
 - inefficient oxygen distribution.

ANS: D DIF: moderate REF: Principles of Hereditary Transmission
MSC: Factual

67. Sickle-cell anemia is a rare disease generally, but it is more common among ____ than among people of other races.
- Hispanics
 - African Americans
 - Asian Americans
 - Caucasians

ANS: B DIF: easy REF: Principles of Hereditary Transmission
MSC: Factual

68. The principle of codominance ____ Mendel's classic principles of inheritance.
- supports
 - is irrelevant to
 - contradicts
 - simplifies

ANS: C DIF: difficult REF: Principles of Hereditary Transmission
MSC: Conceptual

69. Suppose that a child developed mild symptoms of sickle-cell anemia. It may be correctly inferred that
- the child is heterozygous for the sickle-cell trait.
 - the child received the sickle-cell trait from both parents and is homozygous for this disorder.
 - the sickle trait is absent from the child's alleles.
 - the symptoms developed from experiential learning.

ANS: A DIF: difficult REF: Principles of Hereditary Transmission
MSC: Conceptual

70. Sex-linked genetic characteristics
- are controlled by genes located on autosomes.
 - develop via experiential learning.
 - are controlled by genes located at the 23rd chromosome pair.
 - distinguish sex offenders from other adults.

ANS: C DIF: moderate REF: Principles of Hereditary Transmission
MSC: Factual

71. Sex-linked genetic characteristics appear in phenotypes
- of women more often than men.
 - of men more often than women.
 - of women and men rarely and equally.
 - of women and men often and equally.

ANS: B DIF: moderate REF: Principles of Hereditary Transmission
MSC: Factual

72. Which of these illustrates the presence of a recessive sex-linked allele?
- A girl develops Huntington's chorea.
 - A girl falls and cuts her knee, which bleeds slightly.
 - A woman with normal color vision is mother of a son with red/green color blindness.
 - Everyone in a family shares normal color vision.

ANS: C DIF: difficult REF: Principles of Hereditary Transmission
MSC: Applied

73. A woman may develop a recessive sex-linked defective genetic trait
- under no circumstances.
 - if her Y sex chromosome bears a dominant allele.
 - if she is homozygous for the recessive trait.
 - with certainty when she is heterozygous for the trait.

ANS: C DIF: difficult REF: Principles of Hereditary Transmission
MSC: Conceptual

74. Concerning sex-linked genetic characteristics, most are ____ and appear most often in ____ phenotypes.
- beneficial; male
 - beneficial; female
 - disabling; male
 - disabling; female

ANS: C DIF: difficult REF: Principles of Hereditary Transmission
MSC: Factual

75. Men are more susceptible to some disabling conditions such as red/green colorblindness because
- men are not apt to attend to their healthcare needs.
 - families tend to take better care of female children.
 - the Y chromosome lacks the corresponding gene that might counteract the effect of the specific allele associated with the condition.
 - the male immune system is weaker than the female immune system.

ANS: C DIF: moderate REF: Principles of Hereditary Transmission
MSC: Conceptual

76. ____ traits are those for which the phenotype typically can display many continuous variations rather than appearing in an all-or-none fashion.
- Polygenic
 - Mendelian
 - Genetically counseled
 - Genetically imprinted

ANS: A DIF: difficult REF: Principles of Hereditary Transmission
MSC: Conceptual

77. Which of these traits is NOT polygenic?
- Body height
 - Skin color
 - Body weight
 - Hemophilic blood clotting

ANS: D DIF: difficult REF: Principles of Hereditary Transmission
MSC: Conceptual

78. Traits that ____ tend to display the all-or-none pattern of phenotypic expression.
- show simple dominance/recessiveness
 - are codominant
 - are polygenic
 - are developed experientially via learning

ANS: A DIF: difficult REF: Principles of Hereditary Transmission
MSC: Conceptual

79. Most of the characteristics of interest to psychologists, such as personality, are influenced by
- multiple genes.
 - the 23rd chromosome pair.
 - one autosome.
 - the 21st chromosome pair.

ANS: A DIF: moderate REF: Principles of Hereditary Transmission
MSC: Conceptual

80. About ____ percent of newborns are in perfect condition, lacking any congenital defects.
- 99
 - 95
 - 82
 - 52

ANS: B DIF: moderate REF: Hereditary Disorders
MSC: Factual

81. For Huntington's disease,
- the genotype and phenotype are evident from birth.
 - the genotype is present in the newborn, but the phenotype becomes evident at a later age.
 - the newborn lacks either the genotype or the phenotype.
 - the phenotype is present in the newborn but the genotype becomes evident at a later age.

ANS: B DIF: moderate REF: Hereditary Disorders
MSC: Conceptual

82. For every 1,000 births, about ____ children will have an abnormal number of chromosomes.
- 2
 - 4
 - 22
 - 50

ANS: B DIF: moderate REF: Hereditary Disorders
MSC: Factual

83. When chromosomal abnormalities occur,
- most are fatal, killing the baby and pregnant mother.
 - most result in miscarriage early in the pregnancy.
 - most of the defective offspring survive birth, but die during infancy.
 - the chromosomal defects can later be repaired surgically during infancy.

ANS: B DIF: moderate REF: Hereditary Disorders
MSC: Factual

84. Chromosomal abnormalities are often the result of an uneven distribution of chromosomes that occurs
- at conception.
 - during meiosis.
 - during mitosis.
 - at the time of implantation.

ANS: B DIF: moderate REF: Hereditary Disorders
MSC: Factual

85. For genetic females, which of these represents the normal genotype for the 23rd chromosomal pair?
- XO
 - XX
 - XXX
 - XXXX

ANS: B DIF: easy REF: Hereditary Disorders
MSC: Factual

86. For genetic males, the normal genotype for the 23rd pair of chromosomes is
- XY.
 - XXYY.
 - XXY.
 - XYY.

ANS: A DIF: easy REF: Hereditary Disorders
MSC: Factual

87. What is a chromosomal trisomy?
- A medical test to detect abnormal chromosomes.
 - An abnormality that occurs when the child has three parents, as when the mother had sex with two different men on the same night.
 - A genotype abnormality that can be corrected surgically.
 - An extra chromosome within a pair.

ANS: D DIF: moderate REF: Hereditary Disorders
MSC: Factual

88. What is the chromosomal defect that underlies Down syndrome?
- An XYY genotype in the 23rd pair
 - Just 22 chromosomal pairs
 - An XXX genotype in the 23rd pair
 - A third chromosome in the 21st pair

ANS: D DIF: moderate REF: Hereditary Disorders
MSC: Factual

89. Which of these is LEAST characteristic of children with Down syndrome?
- Protruding tongue
 - Short, stubby arms
 - Round-shaped eyes
 - Heart defects

ANS: C DIF: easy REF: Hereditary Disorders
MSC: Factual

90. Most adults with Down syndrome are typically
- able to learn to care for their basic needs.
 - housed in institutions.
 - mentally ill.
 - abandoned.

ANS: A DIF: moderate REF: Hereditary Disorders
MSC: Factual

91. Which of these is LEAST advisable as a maternal tactic to have a baby with normal chromosomes?
- Eat a diet that is rich in folic acid
 - Give birth while younger rather than older
 - Encourage your husband to avoid excessive smoking or drinking
 - Develop a career as an x-ray technician

ANS: D DIF: easy REF: Hereditary Disorders
MSC: Applied

92. For which chromosomal condition is the father's sperm always the source of the developmental defect?
- XYY supermale
 - Down syndrome
 - Turner's syndrome, XO
 - Poly-X superfemale

ANS: A DIF: moderate REF: Hereditary Disorders
MSC: Factual

93. ____ are genetic changes that result in new phenotypes that can be harmful or even fatal.
- Selective breedings
 - Polygenic traits
 - Adoption designs
 - Mutations

ANS: D DIF: easy REF: Hereditary Disorders
MSC: Conceptual

94. The genetic disease phenylketonuria (PKU) is treated by
- regulating the child's diet.
 - minimizing the child's exposure to bright lights.
 - daily injections of a vaccine.
 - surgically removing the child's pituitary gland.

ANS: A DIF: moderate REF: Hereditary Disorders
MSC: Factual

95. Which of these is LEAST likely to trigger a mutation?
- Food additives/preservatives
 - Exposure to radiation
 - Vigorous exercise
 - Toxic waste exposure

ANS: C DIF: easy REF: Hereditary Disorders
MSC: Factual

96. An adaptive advantage of sickle-cell anemia is that it
- eliminates the necessity for doing strenuous labor.
 - reduces the number of patients who eventually retire and then demand social security pensions.
 - provides resistance against malaria infection.
 - is a natural cure for HIV/AIDS.

ANS: C DIF: moderate REF: Hereditary Disorders
MSC: Factual

97. Genetic counseling can involve all of the following EXCEPT
- identifying relatives affected by a genetic disorder.
 - using DNA analyses to determine the presence of hereditary disorders.
 - considering options for the prevention and treatment of a genetic disorder.
 - undergoing genetic engineering.

ANS: D DIF: moderate REF: Hereditary Disorders
MSC: Conceptual

98. What is a pedigree, as used in genetic counseling?
- A chart showing the family history of genetic defects for the couple
 - A listing of expensive purebred pets owned by the family
 - A device used to collect a tissue specimen for analysis
 - A financial record of timely payments of medical bills

ANS: A DIF: easy REF: Hereditary Disorders
MSC: Factual

99. The overall goal of modern genetic counseling is to
- detect abnormalities early so that abortions can be required for the couple.
 - improve the quality of the human gene pool so that a superior “master race” will eventually be developed.
 - do research on the breeding of half-human chimeras.
 - inform the couple about their risk of having a baby with a serious genetic/congenital defects.

ANS: D DIF: moderate REF: Hereditary Disorders

MSC: Conceptual

100. Which technique of genetic counseling requires neither medical tests nor use of sonic vibrations?
- Pedigree tests
 - Amniocentesis
 - Chorionic villus sampling
 - Ultrasound

ANS: A DIF: easy REF: Hereditary Disorders

MSC: Factual

101. Which of these medical diagnostic tests can be done earliest in pregnancy?
- Ultrasound imaging
 - Amniocentesis
 - Genetic engineering
 - Chorionic villus sampling

ANS: D DIF: moderate REF: Hereditary Disorders

MSC: Factual

102. Identify the correct sequence of prenatal diagnostic tests from earliest to latest availability during pregnancy.
- Ultrasound :: chorionic villus sampling :: amniocentesis
 - Amniocentesis :: ultrasound :: chorionic villus sampling
 - Ultrasound :: amniocentesis :: chorionic villus sampling
 - Chorionic villus sampling :: amniocentesis :: ultrasound

ANS: D DIF: difficult REF: Hereditary Disorders

MSC: Factual

103. Which prenatal diagnostic technique has the highest risk of inducing an accidental miscarriage?
- Amniocentesis
 - Chorionic villus sampling
 - Pedigree analysis
 - Ultrasound imaging

ANS: B DIF: moderate REF: Hereditary Disorders

MSC: Factual

104. The risk of a miscarriage resulting from an amniocentesis test is greater than the risk of a birth defect when the mother's age is under ____ years.
- a. 55
 - b. 45
 - c. 35
 - d. 25

ANS: C DIF: difficult REF: Hereditary Disorders
MSC: Factual

105. A woman over 35 has already borne a child with Down syndrome. She becomes pregnant again and immediately visits a genetic counselor for advice. If the woman wishes to abort the baby as soon as possible if the child has Down syndrome, the genetic counselor will suggest
- a. amniocentesis.
 - b. ultrasound.
 - c. germline gene therapy as a prenatal treatment.
 - d. chorionic villus sampling.

ANS: D DIF: moderate REF: Hereditary Disorders
MSC: Applied

106. Pregnant women over the age of 35 often undergo amniocentesis because
- a. they are more interested in the health of their offspring.
 - b. the rate of chromosomal abnormalities is greater after the age of 35.
 - c. at the age of 35, most women can afford the expense.
 - d. this procedure will reveal the sex of their infant.

ANS: B DIF: moderate REF: Hereditary Disorders
MSC: Factual

107. Prenatal diagnostic tests are especially advised for
- a. teenage mothers.
 - b. 20- to 29-year-old mothers.
 - c. 30- to 39-year-old mothers.
 - d. mothers who are 40 or older.

ANS: D DIF: easy REF: Hereditary Disorders
MSC: Factual

108. Which technique of prenatal diagnosis generates an image of the developing baby's body shape?
- a. DNA analysis
 - b. Ultrasound
 - c. Amniocentesis
 - d. Chorionic villus sampling

ANS: B DIF: easy REF: Hereditary Disorders
MSC: Factual

109. The ____ prenatal diagnostic technique is especially suitable and safe for detecting multiple pregnancies (twins, triplets, etc.).
- amniocentesis
 - chorionic villus sampling
 - ultrasound imaging
 - pedigree analysis

ANS: C DIF: moderate REF: Hereditary Disorders
MSC: Factual

110. How long must a phenylketonuria (PKU) patient remain on a special diet to avoid all harmful effects?
- Through infancy
 - Through early childhood
 - Through adolescence
 - Through the lifetime

ANS: D DIF: moderate REF: Hereditary Disorders
MSC: Factual

111. Germline gene therapy bears closest resemblance to
- amniocentesis.
 - selective breeding.
 - gene replacement therapy.
 - chorionic villus sampling.

ANS: C DIF: moderate REF: Hereditary Disorders
MSC: Conceptual

112. ____ is a type of genetic engineering that involves altering or replacing harmful genes during the embryonic stage.
- Canalization
 - Range of reaction
 - Germline gene therapy
 - Selective breeding

ANS: C DIF: moderate REF: Hereditary Disorders
MSC: Factual

113. The greatest ethical controversy about treatments for hereditary disorders concerns the possible misuse of
- germline gene therapy.
 - gene replacement therapy.
 - fetal surgery.
 - genetic counseling.

ANS: A DIF: moderate REF: Hereditary Disorders
MSC: Conceptual

114. Negative eugenics means that
- people with undesirable traits are destroyed.
 - medications are withheld from the baby so that development proceeds naturally.
 - undesirable genetic traits are deleted from the genome.
 - people with the best traits must have big families.

ANS: A DIF: moderate REF: Hereditary Disorders
MSC: Conceptual

115. The overriding goal of eugenics is to
- silence or eliminate political opposition.
 - improve the genetic traits of children.
 - discourage or prevent parents' abuse of their children.
 - discourage overpopulation in society.

ANS: B DIF: moderate REF: Hereditary Disorders
MSC: Conceptual

116. German Nazis, led by Hitler, promoted a species improvement program called "racial hygiene," which required extermination of populations that the Nazis regarded as inferior. This atrocious program was an example of
- gene replacement therapy.
 - germline gene therapy.
 - positive eugenics.
 - negative eugenics.

ANS: D DIF: difficult REF: Hereditary Disorders
MSC: Applied

117. The Mensa Society is a social organization for highly intelligent people. If Mensa members are encouraged to date and marry among themselves, and to have many children, then it practices a mild and voluntary form of
- positive eugenics.
 - negative eugenics.
 - genetic counseling.
 - gene replacement therapy.

ANS: A DIF: moderate REF: Hereditary Disorders
MSC: Applied

118. The study of how genotype interacts with environment to influence behavioral attributes is called
- generational genetic progressivism.
 - Darwinian determinism.
 - reactionary eugenics.
 - behavioral genetics.

ANS: D DIF: moderate REF: Hereditary Influences on Behavior
MSC: Conceptual

119. ETHOLOGY is to BEHAVIORAL GENETICS as ____ is to ____.

- a. WEALTH :: POVERTY
- b. SLAVERY :: FREEDOM
- c. HUMAN SPECIES :: ANIMALS
- d. DEVELOPMENTAL SIMILARITIES :: DEVELOPMENTAL DIFFERENCES

ANS: D DIF: difficult REF: Hereditary Influences on Behavior
MSC: Conceptual

120. The variation of a trait that results from hereditary influence is called

- a. codominance.
- b. heritability.
- c. bionatural determinism.
- d. empathic concern.

ANS: B DIF: moderate REF: Hereditary Influences on Behavior
MSC: Conceptual

121. Tryon's famous selective breeding experiment with rats showed that maze-learning skill

- a. develops through nurturance and education.
- b. is a heritable attribute.
- c. can develop at any level in any individual.
- d. is a useless ability, irrelevant to survival.

ANS: B DIF: moderate REF: Hereditary Influences on Behavior
MSC: Conceptual

122. A slogan of selective breeding would be,

- a. "Let animals observe humans who model the behavior."
- b. "Breed best with best, repeat for many generations."
- c. "Check animals' genes microscopically before permitting them to breed."
- d. "Encourage all to achieve their maximum potential."

ANS: B DIF: moderate REF: Hereditary Influences on Behavior
KEY: Conceptual

123. Tryon's experiments on selective breeding of rats to increase their maze-learning ability was related to

- a. evocative genotype/environment correlation.
- b. concordance data.
- c. in vitro fertilization.
- d. positive eugenics.

ANS: D DIF: difficult REF: Hereditary Influences on Behavior
MSC: Applied

124. If you were a rat in Tryon's selective breeding experiment, which other rat would be your breeding partner if you excelled in the maze test?

- a. Your own chosen partner
- b. A rat that did badly in the test
- c. A rat that did well at maze learning
- d. A randomly selected rat

ANS: C DIF: moderate REF: Hereditary Influences on Behavior
MSC: Applied

125. Because selective breeding is inappropriate for people, ____ research designs are applied instead for human studies of behavioral genetics.
- in vitro fertilization
 - independent assortment
 - family study
 - crossing over

ANS: C DIF: moderate REF: Hereditary Influences on Behavior
MSC: Conceptual

126. SELECTIVE BREEDING is to FAMILY STUDY as ____ is to ____.
- GENOTYPE :: PHENOTYPE
 - DOMINANT :: RECESSIVE
 - AUTOSOME :: SEX CHROMOSOME
 - ANIMAL :: HUMAN

ANS: D DIF: difficult REF: Hereditary Influences on Behavior
MSC: Conceptual

127. FAMILY STUDY is to SELECTIVE BREEDING as ____ is to ____.
- OBSERVATION :: MANIPULATION
 - HOMOZYGOUS :: HETEROZYGOUS
 - MITOSIS :: MEIOSIS
 - NATURE :: NURTURE

ANS: A DIF: difficult REF: Hereditary Influences on Behavior
MSC: Conceptual

128. In a family study that applies the twin design, high heritability for a trait would be shown when
- identical twins differ strongly on their abilities.
 - identical twins show greater trait similarity than is found for fraternal twins.
 - the twins cooperate when performing shared tasks.
 - the twins say they feel similar emotions when involved in shared tasks.

ANS: B DIF: difficult REF: Hereditary Influences on Behavior
MSC: Conceptual

129. Suppose that in a twin design family study, the average trait similarity within identical twins was no higher than for fraternal twins. The same environment was shared within all twin pairs. This outcome implies that
- heritability for the trait is high.
 - heritability is moderate.
 - heritability is low.
 - heritability cannot be estimated.

ANS: C DIF: difficult REF: Hereditary Influences on Behavior
MSC: Applied

130. A trait of adopted children resembled that of their birth parents more than of their adoptive parents. This suggests that
- heritability for the trait is high.
 - heritability is moderate.
 - heritability is low.
 - heritability cannot be estimated.

ANS: A DIF: difficult REF: Hereditary Influences on Behavior
MSC: Applied

131. Kinship is a measure of
- shared environmental influences.
 - cohesiveness within adoptive families.
 - nonshared individualized environmental experiences.
 - the extent to which individuals share the same genes.

ANS: D DIF: moderate REF: Hereditary Influences on Behavior
MSC: Conceptual

132. Kinship is strongest for
- adoptive children and their adoptive families.
 - adoptive children and their biological parents.
 - identical twins.
 - children and biological parents who live together.

ANS: C DIF: easy REF: Hereditary Influences on Behavior
MSC: Conceptual

133. The kinship between a step-mother and her step-children is
- zero.
 - moderate.
 - strong, if she feels affectionate toward the step-children.
 - impossible to estimate.

ANS: A DIF: moderate REF: Hereditary Influences on Behavior
MSC: Conceptual

134. In family studies of trait heritability, concordance rates are calculated instead of correlations when
- the trait phenotype appears in an all-or-none fashion.
 - the trait is continuous and can assume many values.
 - the phenotype is invisible and unnoticed.
 - females, rather than males, are the focus of study.

ANS: A DIF: difficult REF: Hereditary Influences on Behavior
MSC: Conceptual

135. For which trait would concordance rate be chosen for family study analysis, rather than correlation?
- Adult height (inches)
 - Intelligence score
 - Income level (in dollars)
 - Gay/straight orientation

ANS: D DIF: difficult REF: Hereditary Influences on Behavior
MSC: Applied

136. CONCORDANCE RATE is to CORRELATION COEFFICIENT as ____ is to ____.
- a. ABUSE :: NEGLECT
 - b. FANTASY :: REALITY
 - c. OBSERVER :: PARTICIPANT
 - d. CATEGORICAL TRAIT :: CONTINUOUS TRAIT

ANS: D DIF: difficult REF: Hereditary Influences on Behavior
MSC: Conceptual

137. The heritability coefficient is calculated from
- a. means for the groups being compared.
 - b. the variabilities for the groups being compared.
 - c. correlations within identical twin pairs and within fraternal twin pairs.
 - d. trait estimates by mothers and fathers.

ANS: C DIF: difficult REF: Hereditary Influences on Behavior
MSC: Conceptual

138. If the correlation on a trait were .75 for identical twins, .55 for siblings, .23 for cousins, and .11 for genetically unrelated adopted siblings, one could conclude that
- a. heredity plays no role in that trait.
 - b. environment plays no role in that trait.
 - c. heredity is a prime contributor to that trait, but environment also plays a role.
 - d. environment is the prime contributor to that trait, with heredity making only a minor contribution.

ANS: C DIF: difficult REF: Hereditary Influences on Behavior
MSC: Applied

139. The heritability coefficient is LOW if the correlation for
- a. fraternal twins is weak, whereas the correlation for identical twins is strong.
 - b. fraternal twins is equal to the correlation for parent/child.
 - c. fraternal twins is equal to the correlation for identical twins.
 - d. fraternal twins is equal to the correlation for siblings who were born separately.

ANS: C DIF: difficult REF: Hereditary Influences on Behavior
MSC: Conceptual

140. In family studies of heritability, the portion of group variability that is NOT attributed to heritability is attributed instead to
- a. the individual's personal volition (intentions).
 - b. random unsystematic variations.
 - c. unknown psychical forces.
 - d. environmental influences.

ANS: D DIF: easy REF: Hereditary Influences on Behavior
MSC: Conceptual

141. Nonshared environmental influences are
- universals, such as the content of TV cartoon shows.
 - experiences that are uniquely personalized for each child.
 - factors that cannot be sensed or detected.
 - phenotypic expressions of canalized genotypes.
- ANS: B DIF: easy REF: Hereditary Influences on Behavior
MSC: Conceptual
142. Nonshared environmental influences are especially influential on the development of the child's
- school classroom experience.
 - food consumption at home.
 - intelligence.
 - personality.
- ANS: D DIF: difficult REF: Hereditary Influences on Behavior
MSC: Conceptual
143. Suppose that it is customary in Boogrovia for parents of identical twins to treat them exactly alike: same diet, same clothes, same school, same parental attention, etc. On a measure of self-awareness, the correlation for identical twins reared together is strong: $r = +0.99$. The measure of nonshared environmental influences (NSE) will be
- very low; $NSE = +0.01$.
 - low: $NSE = +0.10$.
 - moderate: $NSE = +0.50$.
 - high: $NSE = +0.80$.
- ANS: A DIF: difficult REF: Hereditary Influences on Behavior
MSC: Applied
144. Asian countries such as China or Japan are very collectivistic in social orientation, giving emphasis to cooperation, loyalty to groups, and conformity. It would be expected that in these countries,
- nonshared environmental influences will be strong.
 - shared environmental influences will be strong.
 - heritability on all traits will be weak.
 - kinships will be impossible to calculate.
- ANS: B DIF: difficult REF: Hereditary Influences on Behavior
MSC: Applied
145. According to formulas for heritability coefficient and environmental influences, the sum of heritability (H), shared environmental influences (SE), and nonshared environmental influences (NSE) should equal ____ when calculations are correct.
- 1.00
 - 0.00
 - +1.00
 - 100.00
- ANS: C DIF: moderate REF: Hereditary Influences on Behavior
MSC: Conceptual

146. Overall, the heritability of intelligence is
- entirely absent.
 - weak.
 - moderate.
 - strong.

ANS: C DIF: moderate REF: Hereditary Influences on Behavior
MSC: Factual

147. A common misunderstanding about heritability is that
- it applies to individuals rather than to groups.
 - the H/SE/NSE formulas can be accurately described.
 - researchers are honest about reporting their data.
 - animals, as well as humans, have heritability.

ANS: A DIF: moderate REF: Hereditary Influences on Behavior
MSC: Conceptual

148. Heritability estimations of intelligence
- are based on mathematically erroneous formulas.
 - are known for apes but are unknown for human children.
 - are fixed, regardless of the age when IQ is assessed.
 - vary over the childhood years.

ANS: D DIF: moderate REF: Hereditary Influences on Behavior
MSC: Factual

149. As fraternal twins mature from age three to 15, their IQ correlations tend to
- remain consistently near zero.
 - remain stable and very high.
 - increase.
 - decrease.

ANS: D DIF: difficult REF: Hereditary Influences on Behavior
MSC: Factual

150. For fraternal twins, as well as for adoptive children, _____ influences on intelligence weaken while the child matures through childhood.
- shared environmental influences (SE)
 - nonshared environmental influences (NSE)
 - heritability (H)
 - SE, NSE, and H equally

ANS: A DIF: difficult REF: Hereditary Influences on Behavior
MSC: Factual

151. For identical twins, correlation of their IQ test scores
- remain stable and weak throughout childhood.
 - remain stable and strong throughout childhood.
 - are strong while young, but weaken gradually later.
 - are weak while young, but strengthen gradually later.

ANS: B DIF: difficult REF: Hereditary Influences on Behavior
MSC: Factual

152. Newborn infants show empathic concern for others by
- speaking soothing, comforting words to others.
 - holding back with feces or urination.
 - crying when they hear others cry.
 - telling their caregiver about others' problems.

ANS: C DIF: easy REF: Hereditary Influences on Behavior
MSC: Factual

153. Which of these personality traits has already been shown to be moderately heritable?
- Cruelty
 - Introversion/extroversion
 - Generosity
 - Self-awareness

ANS: B DIF: moderate REF: Hereditary Influences on Behavior
MSC: Factual

154. Introversion/extroversion is a dimension of personality that refers to
- the extent to which a person is shy around others vs. outgoing.
 - the extent to which an individual is able to express his or her internal thoughts.
 - the degree of empathy to which an individual is prone.
 - the extent to which an individual is likely to be aggressive.

ANS: A DIF: moderate REF: Hereditary Influences on Behavior
MSC: Conceptual

155. Generally, developmentalists have ____ the impact of the shared family home environment on children's personality development.
- ignored
 - underestimated
 - accurately judged
 - overestimated

ANS: D DIF: difficult REF: Hereditary Influences on Behavior
MSC: Factual

156. Researchers now believe that the aspects of the environment that contribute most to the development of personality are
- family members.
 - shared environmental influences.
 - peers.
 - nonshared environmental influences.

ANS: D DIF: moderate REF: Hereditary Influences on Behavior
MSC: Conceptual

157. In the home, sibling fights, teasing, or dominance confrontations are ____ because each child experiences those events uniquely.
- nonshared environmental influences
 - shared environmental influences
 - heritability factors
 - ranges of reaction

ANS: A DIF: moderate REF: Hereditary Influences on Behavior
MSC: Conceptual

158. “Mom always liked you best!” was a frequent punchline of the Smothers Brothers’ comedy routine in the 1960s. To the extent that parents have favorites among siblings, ____ is demonstrated at home.
- heritability
 - canalization
 - shared environmental influence
 - nonshared environmental influence

ANS: D DIF: moderate REF: Hereditary Influences on Behavior
MSC: Applied

159. The text reported that nonshared environmental influences can be studied adequately by
- studying archival records such as school grades.
 - asking siblings whether they were treated differently while growing up.
 - secretly observing children with hidden cameras.
 - using microscopes to examine siblings’ karyotypes.

ANS: B DIF: moderate REF: Hereditary Influences on Behavior
MSC: Factual

160. It is WRONG to attribute nonshared environmental influences (NSE) to siblings’ unique genes because
- living in the same home is a shared experience.
 - no one knows what strange genotypes identify aliens.
 - monozygous twins still show NSE effects.
 - parents and children have distinctive genotypes.

ANS: C DIF: difficult REF: Hereditary Influences on Behavior
MSC: Conceptual

161. Among several twin studies, the average concordance rate for schizophrenia with identical twins was
- 0.88.
 - 0.68.
 - 0.48.
 - 0.28.

ANS: C DIF: difficult REF: Hereditary Influences on Behavior
MSC: Factual

162. In several twin studies, the average concordance rate for schizophrenia with identical twins was ____ the concordance rate with fraternal twins.
- stronger than
 - equal to
 - weaker than
 - impossible to compare to

ANS: A DIF: moderate REF: Hereditary Influences on Behavior
MSC: Factual

163. When a mental disorder has a hereditary basis, what is inherited?
- Specific behavioral habits
 - Specific delusional fantasies
 - A predisposition for the disorder
 - Coping strategies for the disorder

ANS: C DIF: moderate REF: Hereditary Influences on Behavior
MSC: Conceptual

164. Extreme theoretical positions on the heredity vs. environment (nature/nurture) controversy
- were more popular in the past than today.
 - are more popular today than in the past.
 - today are considered to have been unnecessarily complex.
 - overemphasized the interaction of factors.

ANS: A DIF: moderate
REF: Theories of Heredity and Environment Interactions in Development
MSC: Conceptual

165. Canalization and range of reaction are ____ because traits that are strongly canalized have narrow reaction range, and vice versa.
- positively correlated
 - uncorrelated
 - negatively correlated
 - irrelevant to compare

ANS: C DIF: difficult
REF: Theories of Heredity and Environment Interactions in Development
MSC: Conceptual

166. Which theorist(s) proposed the three types of genotype/environment correlations discussed in Chapter 2?
- Scarr and McCartney
 - Lorenz and Bowlby
 - Baumrind
 - Gesell and Piaget

ANS: A DIF: moderate
REF: Theories of Heredity and Environment Interactions in Development
MSC: Factual NOT: New

167. A highly canalized trait is one that
- is developed from learning or experience.
 - has origins that are balanced between nature and nurture.
 - is minimally affected by environment, if at all.
 - develops from unknown psychological forces that are neither hereditary nor experiential in origin.

ANS: C DIF: moderate

REF: Theories of Heredity and Environment Interactions in Development

MSC: Conceptual

168. The range of reaction for a strongly canalized trait will tend to be
- narrow, with a small range of possible outcomes.
 - moderate, with a broader range of possible outcomes.
 - wide, with a very large number of diverse possibilities.
 - unpredictable in the absence of further information.

ANS: A DIF: moderate

REF: Theories of Heredity and Environment Interactions in Development

MSC: Conceptual

169. When the type of environment varies, reaction ranges tend to
- be constant, regardless of the child's genetic potential.
 - be widest for children of weak genetic potential.
 - be widest for children of strong genetic potential.
 - vary unpredictably.

ANS: C DIF: difficult

REF: Theories of Heredity and Environment Interactions in Development

MSC: Conceptual

170. The reaction range for a hereditary trait is like
- taking the most direct route when driving to a given destination.
 - a software disk that can be read on only one type of computer.
 - the recorded message on a telephone answering machine that is always heard in the same way.
 - the various range of sizes to which a rubber band might be stretched.

ANS: D DIF: difficult

REF: Theories of Heredity and Environment Interactions in Development

MSC: Conceptual

171. Gottesman's range-of-reaction principle suggests that children with various degrees of genetic potential can reach the top limit of their reaction range by
- expanding their own genetic potential.
 - experiencing a stimulating, enriched environment.
 - removing any restrictions imposed by canalization.
 - being informed that others suffer severe hardships.

ANS: B DIF: moderate

REF: Theories of Heredity and Environment Interactions in Development

MSC: Conceptual

172. The highest intellectual performance is evident when
- children with low potential have enriched environments.
 - children with moderate potential have average environments.
 - children with moderate potential have enriched environments.
 - children with high potential have enriched environments.

ANS: D DIF: easy

REF: Theories of Heredity and Environment Interactions in Development

MSC: Conceptual

173. Canalization refers to the extent to which
- variations will emerge in a phenotype.
 - development will follow a narrow path.
 - the offspring will resemble the parents.
 - an individual is free of disabling conditions.

ANS: B DIF: moderate

REF: Theories of Heredity and Environment Interactions in Development

MSC: Conceptual

174. Blondy inherited her good looks from her mother. She has received compliments about her beauty since childhood and has a positive self-image. Blondy's looks and the compliments encourage her to compete in a pageant. This illustrates a(n) ____ genotype/environment correlation.
- canalized
 - evocative
 - passive
 - active

ANS: B DIF: moderate

REF: Theories of Heredity and Environment Interactions in Development

MSC: Applied

175. A(n) ____ genotype/environment correlation happens when the parents' genetic traits induce them to provide a family home environment that stimulates children's interests in the trait or activity.
- passive
 - active
 - evocative
 - genetic counseling

ANS: A DIF: difficult

REF: Theories of Heredity and Environment Interactions in Development

MSC: Conceptual

176. Parents with innate musical skill fill their home with musical instruments and related paraphernalia. Their kids develop interests in musical performance, thus showing a(n) ____ genotype/environment correlation.
- forced
 - evocative
 - passive
 - active

ANS: C DIF: moderate

REF: Theories of Heredity and Environment Interactions in Development

MSC: Applied

177. The Schnozzles are known for a distinctive genetic trait: big noses. Ollie Schnozzle has a big nose, too, and kids tease him. Ollie is now shy. This shows a(n) ____ genotype/environment correlation.
- a. evocative
 - b. crossing over
 - c. active
 - d. passive

ANS: A DIF: difficult

REF: Theories of Heredity and Environment Interactions in Development

MSC: Applied

178. A person's genotype, as well as the reactions of others to the phenotype, influence the quality of ____ genotype/phenotype correlations.
- a. active (niche-building)
 - b. selectively bred
 - c. passive
 - d. evocative

ANS: D DIF: difficult

REF: Theories of Heredity and Environment Interactions in Development

MSC: Conceptual

179. Children born with a noticeable genetic defect (e.g., harelip) are changed by the defect and by the reactions of others who notice it. This is a(n) ____ genotype/environment correlation.
- a. active (niche-building)
 - b. recessive
 - c. passive
 - d. evocative

ANS: D DIF: moderate

REF: Theories of Heredity and Environment Interactions in Development

MSC: Applied

180. Bonzo is shy because he was born with a third eye that is easily noticed. Bonzo is assertive and bold on the Internet because no one sees his third eye. This illustrates a(n) ____ genotype/environment correlation.
- a. recessive
 - b. active (niche-building)
 - c. evocative
 - d. passive

ANS: C DIF: difficult

REF: Theories of Heredity and Environment Interactions in Development

MSC: Applied

181. Bonnie Beanpole's relatives are tall. She is now 6'4" and towers over her high school classmates. Bonnie seeks the company of tall men in the basketball club. This shows a(n) _____ genotype/environment correlation.
- active (niche-building)
 - negative eugenic
 - passive
 - evocative

ANS: A DIF: moderate

REF: Theories of Heredity and Environment Interactions in Development

MSC: Applied

182. Asthma is common in Arizona because patients move there for its dry climate. This migration shows a(n) _____ genotype/environment correlation.
- passive
 - active (niche-building)
 - evocative
 - sex-linked

ANS: B DIF: difficult

REF: Theories of Heredity and Environment Interactions in Development

MSC: Applied

183. As a child matures into adolescence, _____ genotype/environment correlations become more important.
- passive
 - active (niche-building)
 - canalized
 - evocative

ANS: B DIF: moderate

REF: Theories of Heredity and Environment Interactions in Development

MSC: Conceptual

184. Through active niche-building, similarities within pairs of fraternal twins _____ as they mature from childhood to adulthood.
- weaken
 - remain stable
 - strengthen
 - become difficult to assess

ANS: A DIF: difficult

REF: Theories of Heredity and Environment Interactions in Development

MSC: Conceptual

185. Interpreting the effects of different environments on separately reared twins is complicated by the fact that
- the twins often visit each other surreptitiously.
 - even different environments share many similarities.
 - genes detect habitat changes and then adapt.
 - twins may be embarrassed to admit to running away.

ANS: B DIF: difficult

REF: Theories of Heredity and Environment Interactions in Development

MSC: Conceptual

186. In developmental theory, the impact of nature is expressed as
- the child's environment.
 - the parents' nurturant intentions.
 - biological maturation.
 - the social dynamics among the child's peers.

ANS: C DIF: moderate

REF: Theories of Heredity and Environment Interactions in Development

MSC: Conceptual

187. ____ theory emphasizes biological aspects of development.
- Freud's psychoanalytical
 - Lorenz's ethological
 - Vygotsky's sociocultural
 - Bronfenbrenner's ecological systems

ANS: B DIF: moderate REF: The Ethological and Evolutionary Viewpoints

MSC: Conceptual NOT: New

188. Arnold Gesell's maturational theory of development resembles ____ viewpoint.
- Lorenz's ethological
 - Erikson's psychosocial
 - Piaget's cognitive
 - the information-processing

ANS: A DIF: difficult REF: The Ethological and Evolutionary Viewpoints

MSC: Conceptual NOT: New

189. "Development happens predictably while the child ages, when genetically planned abilities unfold." This is a statement of ____ theory.
- Vygotsky's sociocultural
 - information-processing
 - Skinner's behavioral
 - Gesell's maturational

ANS: D DIF: difficult REF: The Ethological and Evolutionary Viewpoints

MSC: Conceptual

190. ____ involves the study of the impact that evolution may have on the behavior of humans.
- Ethology
 - Ecology
 - Natural selection
 - Imprinting

ANS: A DIF: moderate REF: The Ethological and Evolutionary Viewpoints

MSC: Factual NOT: New

191. Which research topic would most appeal to a human ethologist such as John Bowlby?
- Nurturance of eggs by brooding mother dinosaurs
 - Reflexes in human infants
 - Children's observational learning of video games
 - Learning of preschoolers' food preferences

ANS: B DIF: moderate REF: The Ethological and Evolutionary Viewpoints

MSC: Applied NOT: New

192. Natural selection is a key supporting principle of ____ theory.
- ethological
 - Piaget's cognitive
 - psychoanalytical
 - sociocultural

ANS: A DIF: moderate REF: The Ethological and Evolutionary Viewpoints
MSC: Conceptual NOT: New

193. A primary assumption of the ethological viewpoint is that
- the environment is the most important factor in human development.
 - members of a species share a number of adaptive behaviors that are the products of evolution.
 - children pass through a series of stages as they develop.
 - development is highly influenced by the cultural context in which it occurs.

ANS: B DIF: moderate REF: The Ethological and Evolutionary Viewpoints
MSC: Conceptual NOT: New

194. CRITICAL PERIOD is to SENSITIVE PERIOD as ____ is to ____.
- WARMTH :: COLD
 - ABRUPT :: GRADUAL
 - PARENT :: OFFSPRING
 - DEMOCRAT :: REPUBLICAN

ANS: B DIF: difficult
REF: The Ethological and Evolutionary Viewpointspage 59-60
MSC: Conceptual

195. Ethologists emphasize ____ among individuals' development, while behavioral learning theorists emphasize ____.
- quicken speed; accuracy
 - variations; consistencies
 - experiential effects; biological maturation
 - similarities; differences

ANS: D DIF: difficult REF: The Ethological and Evolutionary Viewpoints
MSC: Conceptual

196. According to ethologist John Bowlby, the crying of infants is adaptive because crying
- creates frustration in caregivers.
 - helps infants develop better coping skills.
 - aids in lung development.
 - ensures that basic needs are met and promotes the development of emotional attachments.

ANS: D DIF: moderate REF: The Ethological and Evolutionary Viewpoints
MSC: Factual

197. Proponents of modern evolutionary theory argue that preselected, adaptive motives and behaviors are those that
- ensure the survival and spread of the individual's genes.
 - ensure the survival of the individual.
 - ensure the formation of emotional ties to caregivers.
 - encourage the learning of survival techniques.

ANS: A DIF: moderate REF: The Ethological and Evolutionary Viewpoints
MSC: Conceptual NOT: New

198. Modern evolutionary theorists view the relatively long developmental process of human beings as
- evidence of human superiority to other animals.
 - proof of the influence of the id in evolutionary development.
 - suggesting the importance of thorough learning in human development.
 - a necessary evolutionary adaptation.

ANS: D DIF: moderate REF: The Ethological and Evolutionary Viewpoints
MSC: Conceptual NOT: New

199. MITOSIS is to MEIOSIS as _____ is to _____.
- NATURE::NURTURE
 - QUANTITATIVE::QUALITATIVE
 - ACTIVE::PASSIVE
 - HOLISTIC::PIECEMEAL

ANS: B DIF: moderate
REF: Applying Developmental Themes to Hereditary Influences on Development
MSC: Conceptual NOT: New

SHORT ANSWER

1. Differentiate between the terms genotype and phenotype.

ANS: Answer not provided.

DIF: easy REF: Principles of Hereditary Transmission
MSC: Conceptual

2. Sketch an illustration that depicts the differences between mitosis and meiosis.

ANS: Answer not provided.

DIF: difficult REF: Principles of Hereditary Transmission
MSC: Conceptual

3. Identify two different types of twins, and describe the way in which each type of twinning occurs.

ANS: Answer not provided.

DIF: easy REF: Principles of Hereditary Transmission
MSC: Conceptual

4. Explain why an individual's sex is determined entirely by the genetic code contained in the father's sperm.

ANS: Answer not provided.

DIF: difficult REF: Principles of Hereditary Transmission

MSC: Conceptual

5. Some women display recessive sex-linked traits such as color blindness. When this occurs, what can you infer about the genotype and phenotype for each of the parents?

ANS: Answer not provided.

DIF: difficult REF: How Are Genes Expressed? KEY: Applied

6. Four chromosome disorders result from an abnormal number of chromosomes at site 23. Identify each of them.

ANS: Answer not provided.

DIF: moderate REF: Hereditary Disorders MSC: Factual

7. Explain the chromosome abnormality associated with Down syndrome.

ANS: Answer not provided.

DIF: easy REF: Hereditary Disorders MSC: Conceptual

8. List three examples of defects that are attributable to a single pair of genes, rather than to chromosomal abnormalities.

ANS: Answer not provided.

DIF: easy REF: Hereditary Disorders MSC: Factual

9. List three methods of prenatal testing, and note the timing of when each is available in the pregnancy.

ANS: Answer not provided.

DIF: moderate REF: Hereditary Disorders MSC: Conceptual

10. Briefly discuss the hereditary disorder of phenylketonuria (PKU).

ANS: No answer provided.

DIF: moderate REF: Hereditary Disorders MSC: Factual

11. Describe germline gene therapy, and discuss the ethical issues associated with this form of treatment.

ANS: Answer not provided.

DIF: difficult REF: Hereditary Disorders MSC: Conceptual

12. Behavioral geneticists who study human behavior usually rely on two types of family studies to determine the influence of heredity on a trait. Describe the rationale behind each of these research designs and also indicate the types of comparisons that can be made with each design.

ANS: Answer not provided.

DIF: difficult REF: Hereditary Influences on Behavior MSC: Conceptual

13. Explain the difference between shared and nonshared environmental influences.

ANS: Answer not provided.

DIF: moderate REF: Hereditary Influences on Behavior MSC: Factual

14. Explain what is meant by the term canalization, and provide an example.

ANS: Answer not provided.

DIF: easy REF: Theories of Heredity and Environment Interactions in Development
MSC: Applied

15. Describe the ways in which concordance rates and correlation coefficients differ in the study of trait heritability.

ANS: Answer not provided.

DIF: difficult REF: Hereditary Influences on Behavior MSC: Conceptual

16. Summarize the range-of-reaction principle, using appropriate examples.

ANS: Answer not provided.

DIF: moderate REF: Theories of Heredity and Environment Interactions in Development
MSC: Applied

17. Use genotype/environment correlations to explain why fraternal twins and other non-twin siblings are likely to become increasingly dissimilar on many attributes as they mature.

ANS: Answer not provided.

DIF: difficult REF: Theories of Heredity and Environment Interactions in Development
MSC: Applied

18. Use genotype/environment correlations to explain why identical twins are likely to show a high similarity to one another, even when they are raised in different home environments.

ANS: Answer not provided.

DIF: difficult REF: Theories of Heredity and Environment Interactions in Development
MSC: Applied

19. Explain what ethologists mean by a “sensitive period,” and provide one example of a characteristic that has a sensitive period.

ANS: Answer not provided.

DIF: moderate REF: The Ethological and Evolutionary Viewpoints

MSC: Applied NOT: New

20. Explain how Scarr and McCartney’s genotype/environment correlations relate to the active/passive developmental theme in your text.

ANS: Answer not provided.

DIF: difficult

REF: Applying Developmental Themes to Hereditary Influences on Development

MSC: Conceptual

ESSAY

1. Phenotype is the expression of genotype and is determined according to three basic patterns: dominance, codominance, and genetic imprinting. Define each pattern, and give an example trait for each.

ANS: Simple dominance applies to a variety of physical traits such as eye color, hair color, and disorders such as PKU and Tay-Sachs disease. These traits are determined by a single pair of genes, called alleles; the dominant allele is the one that is actually expressed. A recessive trait can only be expressed if both alleles are recessive. Thus, if D stands for dark hair and d stands for blond hair, the phenotype will be dark hair with the combinations DD, Dd, and dD. The phenotype will be blond hair only with dd. Codominance occurs when the phenotype is a compromise between two alleles, as with blood type AB, which occurs when a type A allele and a type B allele combine and are equally expressed in the phenotype. Genetic imprinting occurs when a gene pair contains a biochemical marker that allows one parent’s allele (either the mother’s or the father’s) to be expressed, regardless of its composition. This means that some traits are more likely to appear in offspring when the father displays that trait, and that other traits are more likely to be displayed in offspring when the mother displays the trait. An example of a trait that shows paternal genetic imprinting is diabetes; a trait that shows maternal genetic imprinting is Angelman syndrome.

DIF: difficult

REF: How Are Genes Expressed?

MSC: Conceptual

2. Describe the factors involved in dominant and recessive inheritance. Include discussion of alleles, homozygous, heterozygous, genotype, and phenotype.

ANS: Simple dominant–recessive inheritance. Many human characteristics are influenced by only one pair of genes (called alleles): one from the mother, one from the father. Although he knew nothing of genes, a 19th-century monk named Gregor Mendel contributed greatly to our knowledge of single gene-pair inheritance by cross-breeding different strains of peas and observing the outcomes. His major discovery was a predictable pattern to the way in which two alternative characteristics (for example, smooth seeds vs. wrinkled seeds, green pods vs. yellow pods) appeared in the offspring of cross-breedings.

Consider the fact that about three-fourths of us have the ability to see distant objects clearly (that is, normal vision), whereas the remaining one-fourth of us cannot and are myopic (nearsighted). The gene associated with normal vision is a dominant allele. A weaker gene resulting in nearsightedness is a recessive allele. So a person who inherits one allele for normal vision and one allele for myopia would display a phenotype of normal vision because the normal-vision gene overpowers (that is, dominates) the nearsightedness gene.

Because a normal-vision allele dominates a nearsightedness allele, we represent the normal-vision gene with a capital N and the nearsightedness gene with a lowercase n. Perhaps you can see that there are three possible genotypes for this visual characteristic: (1) two normal-vision alleles (NN), (2) two nearsightedness alleles (nn), and (3) one of each (Nn). People whose genotype for an attribute consists of two alleles of the same kind are said to be homozygous for that attribute. Thus, an NN individual is homozygous for normal vision and will pass only genes for normal vision to his or her children. An nn individual is homozygous for nearsightedness (the only way one can actually be nearsighted is to inherit two of these recessive alleles) and will pass nearsightedness genes to his or her children. Finally, an Nn individual is said to be heterozygous for this visual trait because he or she has inherited alternative forms of the allele. This person will have normal vision, because the N allele is dominant. And what kind of allele will the heterozygous person pass along to children? Either a normal-vision gene or a nearsightedness gene. Even though a heterozygous person has normal vision, exactly half the gametes produced by this individual will carry a gene for normal vision and half will carry a gene for nearsightedness.

Can two individuals with normal vision ever produce a nearsighted child? The answer is yes—if each parent is heterozygous for normal vision and is a carrier of the recessive allele for nearsightedness. If a sperm bearing a normal-vision (N) allele unites with an ovum carrying a normal-vision (N) allele, the result is an NN, or a child that is homozygous for normal vision. If a sperm bearing an N gene fertilizes an ovum carrying an n gene, or if an n sperm fertilizes an N ovum, the result is a heterozygous child with normal vision. Finally, if both sperm and ovum carry an n gene, the child will be nearsighted. Because each of these four combinations is equally likely in any given mating, the odds are 1 in 4 that a child of two Nn parents will be nearsighted. This graphic representation of parents' alleles and their possible combinations to form unique inheritable traits is called a Punnett Square.

The normal-vision/nearsightedness trait is one of thousands of human attributes determined by a single gene pair in which one particular allele dominates another (Connor, 1995).

DIF: moderate REF: How Are Genes Expressed? MSC: Conceptual

3. Three basic prenatal methods of detecting abnormalities are amniocentesis, chorionic villus sampling (CVS), and ultrasound. Describe each, noting what general kinds of abnormalities each can detect.

ANS: Amniocentesis involves inserting a large, hollow needle into the amniotic sac to obtain fetal body cells for analysis; CVS obtains fetal cells by catheterization through the cervix. Each can detect chromosomal abnormalities as well as many recessive abnormalities and diseases. However, amniocentesis cannot be carried out until early in the second trimester of the pregnancy (the 11th to 14th week, at the earliest), whereas CVS can be carried out just after the end of the embryonic stage (ninth week). The results from an amniocentesis are generally not available until two weeks after the procedure has been completed; the results from a CVS procedure may be available within 24 hours. Ultrasound is a sonar-like scanning of the fetus without the risk of infection, etc., associated with the other two methods. But ultrasound can only detect gross physical abnormalities (i.e., as indicated by the shape of the fetus).

DIF: easy

REF: Hereditary Disorders

MSC: Conceptual

4. Early in their marriage, in their mid-20s, Charles and Leona had two normal children, a boy and girl. Later, when Charles and Leona were both 42 years old, Leona unexpectedly became pregnant again, despite the birth control methods the couple had practiced for many years. Both parents were in good physical health and there was no history of genetic disorders in either of their families. Still, they wondered about the risks of a genetic or chromosomal disorder in their child-to-be. (a) What might a genetic counselor tell the parents about their chances of having a child with Down syndrome? (b) What methods might be employed to determine if the fetus is normal prior to birth? (c) What other kinds of defects might these methods detect?

ANS: (a) Statistically, the risk of a child with Down syndrome is 1 out of 65 for a mother in this age range, as compared to only 1 out of 1,000 when the earlier children were born. Thus, the risk has increased substantially. (b) Amniocentesis or chorionic villus sampling (CVS) would allow karyotyping, which would reveal the extra chromosome on the 21st pair in the case of Down syndrome. (c) All of the sex-chromosome abnormalities, with any sample of fetal cells; some recessive defects such as sickle-cell anemia, Tay-Sachs disease, cystic fibrosis, and hemophilia.

DIF: easy

REF: Hereditary Disorders

MSC: Application

5. Summarize current thinking regarding hereditary contributions to behavior disorders and mental illnesses. What contribution does a person's environment make to these?

ANS: Is there a hereditary basis for mental illness? Might some people be genetically predisposed to commit deviant or antisocial acts? Although these ideas seemed absurd 30 years ago, it now appears that the answer to both questions is a qualified yes.

Consider the evidence for schizophrenia—a serious mental illness, characterized by severe disturbances in logical thinking, emotional expression, and social behavior that typically emerges in late adolescence or early adulthood. A survey of several twin studies of schizophrenia suggests an average concordance rate of .48 for identical twins but only .17 for fraternal twins (Gottesman, 1991). In addition, children who have a biological parent who is schizophrenic are at increased risk of becoming schizophrenic themselves, even if they are adopted by another family early in life (Loehlin, 1992). These are strong indications that schizophrenia is genetically influenced.

Because identical twins are usually discordant (that is, not alike) with respect to mental illnesses and behavior disorders, environment must be a very important contributor to these conditions. In other words, people do not inherit behavioral disorders; instead, they inherit predispositions to develop certain illnesses or deviant patterns of behavior. And even when a child's family history suggests that such a genetic predisposition may exist, it usually takes a number of very stressful experiences (for example, rejecting parents, a failure or series of failures at school, or a family breakup due to divorce) to trigger a mental illness (Plomin & Rende, 1991; Rutter, 1979). Clearly, these findings provide some basis for optimism, for it may be possible someday to prevent the onset of most genetically influenced disorders should we (1) learn more about the environmental triggers that precipitate these disturbances while (2) striving to develop interventions or therapeutic techniques that will help high-risk individuals to maintain their emotional stability in the face of environmental stress (Plomin & Rutter, 1998).

DIF: moderate REF: Hereditary Influences on Behavior MSC: Application

6. The heritability coefficient is stated as $H = (r_{\text{identical twins}} - r_{\text{fraternal twins}}) \times 2$. Discuss the value and the limitations of assessing heritability in this fashion.

ANS: Logically, the difference we find between average correlations for identical twins and fraternal twins on a trait (such as intelligence or personality) reflects only heredity. Even though identical twins often share the same environmental factors (such as how they are treated by parents, siblings, and peers), some of this is offset by the observation that fraternal twins also share some environmental factors the same way. Thus the statistic is useful, though perhaps somewhat inflated if the rearing environments for pairs of identical twins are indeed more similar than those for fraternal twins. Note also, however, that this tells us nothing about the extent to which a trait is actually "inherited" by a given individual. We could not, for example, use information about the parents to make a probability statement about how intelligent a child will be or what kind of personality the child will have.

DIF: difficult REF: Hereditary Influences on Behavior MSC: Conceptual

7. Suzanne is 16, her younger sister Ellen is 13, and the two girls are as different as night and day. Suzanne is impulsive, short-tempered, and generally hard to get along with, at least from her parents' point of view, although she is very popular with adolescents of her own age. Ellen is typically quiet and pensive, much more interested in school studies than in her peers and generally reserved around other people. (a) How do the girls rate on the introversion/extraversion scale? (b) In terms of genetics, how might the girls be so different? (c) In terms of environment, how might the girls be so different?

ANS: (a) Suzanne is on the extravert end of the continuum; Ellen is introverted. (b) The girls have only 50 percent of their genes in common (i.e., a .50 kinship quotient). The particular genetic combinations in each girl are also different, noting that a given pair of parents is capable of producing perhaps 64 trillion different children. Finally, personality is polygenic, which means that different combinations of genes could have markedly different expressions. (c) The first-born child is typically reared somewhat differently and may also dominate the younger sibling. Such differences yield markedly different environments within the same home. The girls would also experience different classrooms in school, different friends, and a host of other nonshared characteristics.

DIF: difficult REF: Hereditary Influences on Behavior MSC: Application

8. Scarr and McCartney proposed three ways in which genotypes might influence the environments children experience, producing reciprocal effects on development. Define and give an example of each type of genotype/environment correlation.

ANS: Passive genotype/environment interaction notes that parents contribute the genes to the child in the first place, and parents also tend to express their genes in the environment they create for the child. Thus, if the parents are extraverts, they would tend to create a highly social, outgoing environment that would model extraversion for the child. The evocative type of genotype/environment interaction occurs when genetic traits displayed by the child elicit behavior from others that in turn enhances those traits. For example, others might respond to an extraverted child by behaving in a highly sociable fashion, thus enhancing and reinforcing extraversion. An active genotype/environment interaction occurs when the child's traits result in the child seeking out "niches" that support and maintain those traits. Thus, an extraverted child will actively seek situations involving socializing with others, and those situations maintain the extraversion.

DIF: difficult REF: Theories of Heredity and Environment Interactions in Development
MSC: Conceptual

9. Discuss the ethological perspective in terms of the nature vs. nurture issue and the activity vs. passivity issue.

ANS: Ethologists strongly favor biological and maturation nature-oriented explanations of behavior, noting their tendency to view behavior in terms of natural selection and evolutionary pressures. Children are active participants in their development, especially with regard to reciprocal determinism. Ethologists tend to look at the universals of behavior within a species.

DIF: moderate REF: The Ethological and Evolutionary Viewpoints
MSC: Conceptual NOT: New

10. Give one example of a topic in this chapter that illustrates each of the four developmental themes this text emphasizes.

ANS: The first developmental theme is active/passive. Scarr and McCartney emphasize how children's characteristics influence the environment they in turn experience in an active, though not intentional, way.

The second developmental theme is nature/nurture. In a sense, this whole chapter has been about this very theme. Family studies discussed here attempt to determine the relative contributions (and interactive nature) of genetics to behavioral traits.

The third developmental theme is continuity/discontinuity. The distinction made in this chapter between critical periods (qualitative/discontinuous change) and sensitive periods (quantitative/continuous change) fits well with this theme.

The final developmental theme is the holistic nature of childhood. This chapter's emphasis on the interaction between genetics and environment to influence child development takes a more holistic view, rather than choosing one path and emphasizing it alone.

DIF: moderate
REF: Applying Developmental Themes to Hereditary Influences on Development
MSC: Factual