1. Every person starts life as a single cell called an embryo.
   A) True
   B) False

2. Almost every cell in the human body has 23 single chromosomes.
   A) True
   B) False

3. Genes are located on chromosomes.
   A) True
   B) False

4. The first 22 chromosomes contain hundreds of genes in the same positions and sequence. If the code of the gene from one parent is exactly like the code of the same gene from the other parent, the gene pair is heterozygous.
   A) True
   B) False

5. Each variation of a particular gene is called an allele of that gene.
   A) True
   B) False

6. An individual's collection of genes is called a phenotype.
   A) True
   B) False

7. An individual's phenotype depends entirely on an individual's genes.
   A) True
   B) False

8. All humans have about 100,000 genes.
   A) True
   B) False

9. If the 23rd pair of chromosomes contains two X chromosomes, that individual is a male.
   A) True
   B) False

10. If the 23rd pair of chromosomes contains one X chromosome and one Y chromosome, the individual is a male.
    A) True
    B) False

11. Every ovum a woman creates contains an X chromosome.
    A) True
    B) False

12. The mother's ovum determines whether the developing baby will become a boy or a girl.
    A) True
    B) False

13. Dizygotic twins originate from the same zygote; therefore, they have the same genotype.
    A) True
    B) False

14. Almost every trait is polygenic, which means it is affected by many genes.
    A) True
    B) False

15. When the effects of genes add up to make the phenotype, they are called dominant–recessive genes.
    A) True
    B) False

16. When a person inherits a recessive gene that is not expressed in the phenotype, that person is a carrier of the gene.
    A) True
    B) False

17. When the 23 pairs of chromosomes duplicate and form two complete sets of the genome, this process is referred to as duplication.
    A) True
    B) False

18. The first two weeks of prenatal development are called the fetal period.
    A) True
    B) False

19. The cells that result from the early duplication and division processes are called stem cells, which are able to produce any other specialized cell.
    A) True
    B) False

20. At the end of the embryonic period, the embryo has all of the basic organs and body parts (except sex organs) of a human being.
    A) True
    B) False

21. The fetus gains about 2 pounds in the third trimester.
    A) True
    B) False

22. Birth takes place around 266 days after conception.
    A) True
    B) False

23. The Apgar scale refers to the age at which a fetus might survive if born.
    A) True
    B) False

24. The Apgar scale measures color, heart rate, cry, muscle tone, and breathing.
    A) True
    B) False

25. A newborn's cry is assessed when assigning an Apgar score.
    A) True
    B) False

26. Home births are more common in European nations than in the United States.
    A) True
    B) False

27. Doulas have been shown to have little benefit in helping women during the birth process.
    A) True
    B) False

28. Between 8 and 15 percent of all women experience postpartum depression in the days and weeks after giving birth.
    A) True
    B) False

29. Birth-related complications are more likely when there is a father listed on the birth record.
    A) True
    B) False

30. The Brazelton Neonatal Behavioral Assessment Scale (NBAS) is a test often administered to newborns that measures responsiveness and records 46 behaviors, including 20 reflexes.
    A) True
    B) False

31. Couvade is when the zygote embeds itself into the lining of the uterus.
    A) True
    B) False

32. Behavioral teratogens cause physical defects.
    A) True
    B) False

33. Genes can influence the effects of teratogens.
    A) True
    B) False

34. The most common extra-chromosome condition is fragile X syndrome.
    A) True
    B) False

35. The last months of prenatal development are a critical period for body formation.
    A) True
    B) False

36. A threshold effect means that some teratogens are virtually harmless until exposure reaches a certain level, at which point they become damaging.
    A) True
    B) False

37. Embryos exposed to large amounts of alcohol may develop fetal alcohol syndrome.
    A) True
    B) False

38. Teratogens increase the risk of harm but do not always cause damage.
    A) True
    B) False

39. The term for a temporary lack of oxygen is *anorexia*.
    A) True
    B) False

40. Low birthweight is defined as a newborn that weighs less than 2,500 grams.
    A) True
    B) False

41. A “small for gestational age” baby means the same as an “underweight preterm” newborn.
    A) True
    B) False

42. The nations of sub-Saharan Africa have low rates of low-birthweight babies.
    A) True
    B) False

43. Genes and alleles for alcohol use disorder have been found exclusively on the Y chromosome.
    A) True
    B) False

44. Sex (XX or XY) is a factor in explaining why women become drunk on more alcohol than men.
    A) True
    B) False

45. Genes, culture, and age all affect vision.
    A) True
    B) False

46. Heritability indicates how much of the variation of a trait within a particular population and in a particular context can be traced to genes.
    A) True
    B) False

47. Genes affect disorders such as alcohol use disorder and nearsightedness, but research indicates that the environment plays a role as well.
    A) True
    B) False

Answer Key

1. B
2. B
3. A
4. B
5. A
6. B
7. B
8. B
9. B
10. A
11. A
12. B
13. B
14. A
15. B
16. A
17. A
18. B
19. A
20. A
21. B
22. A
23. B
24. A
25. A
26. A
27. B
28. A
29. B
30. A
31. B
32. B
33. A
34. B
35. B
36. A
37. A
38. A
39. B
40. A
41. B
42. B
43. B
44. B

45. A
46. A
47. A

1. Explain how cells, proteins, deoxyribonucleic acid (DNA) molecules, chromosomes, and genes are related.

2. Define *genotype* and *phenotype*, explain the impact of both on an individual's traits, and give an example of each.

3. Describe how the gender of a fetus is decided at conception.

4. Describe the difference between monozygotic and dizygotic twins and how each type is conceived.

5. Describe how a one-celled zygote develops into a baby with 5 trillion specialized cells via the processes of duplication, division, and differentiation.

6. Describe three of the four surprises revealed upon the completion of the Human Genome Project.

7. Explain how color blindness is inherited and why it is much more common in one gender than in the other.

8. Briefly describe differentiation, noting when it begins. Give at least two examples of cell differentiation.

9. Describe the germinal period, embryonic period, and fetal period of prenatal development. State the length of each period, and detail the major developmental milestones that occur during each period.

10. Give a general description of the embryonic period. Detail the embryo's status at the end of this period.

11. Explain the procedure known as a cesarean section, and discuss at least two benefits and two risks associated with this kind of delivery.

12. Describe the maternal symptoms of postpartum depression. What are two possible outcomes of postpartum depression for the baby?

13. Define *couvade,* and give two examples.

14. What makes Down syndrome a chromosomal condition? Identify four characteristics often associated with Down syndrome.

15. Define *behavioral teratogens,* and give one example. State two potential consequences of exposure to these teratogens.

16. Identify at least three teratogens. Because the impact of a teratogen depends on multiple factors, briefly describe two such factors.

17. Name four factors that contribute to low birthweight.

18. Explain how nature and nurture can interact to result in alcohol use disorder.

Answer Key

1. All living things are composed of cells. The work of cells is done by proteins. Each cell manufactures certain proteins according to the instructions stored by molecules of DNA at the heart of each cell. These coding DNA molecules are on a chromosome. The instructions in the chromosomes are organized into genes. Genes direct the formation of specific proteins.

	Good (5 pts)	Fair (3 pts)	Weak (1-0 pts)
Explain how five components are related	Explains how all five components are related	Explains how three or four components are related	Explains how two or fewer components ar related

2. Genotype refers to the collection of genes a person carries in his or her DNA. For example, a person may carry a gene for red hair without having red hair. Phenotype is a person's actual appearance and behavior. In addition to the genes a person inherits, epigenetic factors and the interaction among genes determine the actual traits that are expressed in each person. For example, a person may carry a gene for being tall, but without the nutrition needed may not become tall.

	Good (5 pts)	Fair (3 pts)	Weak (1-0 pts)
Define genotype and phenotype	Defines genotype and phenotype	Defines either genotype or phenotype	Cannot define either term *or* confuses the terms
Explain the impact of both	Explains the impact of both terms	Explains the impact of either term	Does not explain the impact of either term or confuses the terms
Give an example for both terms	Gives an example for both terms	Gives an example for either term	Does not give an example for either term or confuses the terms

3. Sex is determined by the 23rd set of chromosomes. If the set contains two X chromosomes, then the infant is female. If it contains an X and a Y, then the infant is a boy. The mother's egg cell is always an X. Therefore, the father's sperm determines the sex of the infant because the sperm can carry either an X or a Y chromosome.

	Good (5 pts)	Fair (3 pts)	Weak (1-0 pts)
Explain how the gender is decided	Gives the answer listed above	Gives the answer listed above using just X-Y instead of mentioning chromosomes	Just states how a father's sperm determines gender without explanation

4. Monozygotic, or identical, twins result when one ovum is fertilized by one sperm, and the zygote splits into two separate cells. This results in two identical cells that are eventually born as identical twins. Dizygotic, or fraternal, twins result when two ova are fertilized by two different sperms.

	Good (5 pts)	Fair (3 pts)	Weak (1-0 pts)
Describe the difference	States that monozygotic twins are identical and dizygotic are fraternal	Uses the terms identical and fraternal instead of the scientific terms	Cannot describe the difference or confuses the two twin types
Explain how each type is conceived	Explains the conception process for both twin types	Explains the conception process for either twin type	Cannot explain the conception process for either twin type

5. Within hours after conception, a zygote begins duplication and division. First the 23 pairs of chromosomes carrying all the genes duplicate, forming two complete sets of the genome. These two sets move toward opposite sides of the zygote, and the single cell splits down the center, forming two cells. Each of these cells contains the original genetic code. These two cells duplicate and divide again, becoming four, which duplicate and divide, becoming eight, and so on. At approximately the eight-cell stage, although duplication and division continue, differentiation begins. During differentiation, cells specialize, becoming heart, ear, or liver cells, etc.

	Good (5 pts)	Fair (3 pts)	Weak (1-0 pts)
Describe initial duplication	Describes initial duplication, using vocabulary such as chromosomes and genome	Describes initial duplication without using vocabulary	Does not describe initial duplication
Describe division and differentiation	Describes division and differentiation, including when differentiation begins	Is vague about division *or* differentiation	Cannot describe division and differentiation

6. Following the completion of the Human Genome Project in 2001, people were surprised to find that (1) humans have far fewer than 100,000 genes, the number often cited in the twentieth century. The total number of human genes is about 20,000 to 23,000. (2) The precise number of genes is unknown because it is not always easy to figure out where one gene starts and another ends, or even if a particular stretch of DNA is actually a gene. (3) Any two men or women, of whatever ethnicity, share 99.5 percent of their genetic codes. (4) The genetic codes for humans and chimpanzees are 98 percent the same, and the genomes for every other mammal are at least 90 percent the same as for people.

	Good (5 pts)	Fair (3 pts)	Weak (1-0 pts)
Describe three surprises	Describes three of the four surprises outlined above (states far less than 100,000 *or* approx. 20,000 genes)	Describes two of the four surprises outlined above	Describes one or none of the surprises outlined above

7. Color blindness is an X-linked recessive gene. This means that it is always passed on from a mother on the X chromosome. Because boys have one X and one Y

chromosome, they inherit one recessive gene on the X chromosome and have no dominant chromosome to overpower it on the Y chromosome. This makes them much more apt to be color-blind. Girls have two X chromosomes. This means that they will usually have a dominant gene on the other X chromosome. Thus, they may carry the trait but will not experience it themselves.

	Good (5 pts)	Fair (3 pts)	Weak (1-0 pts)
Explain color blindness inheritance	Explains how color blindness is carried on the X chromosome, making males vulnerable	Explains that color blindness comes from a parent without identifying the mother or without identifying which gender is vulnerable	Cannot explain sex-linked color blindness inheritance
Describe why males are more apt to be color-blind	Describes why males are apt to have it by discussing chromosomes and how females can carry it	Describes why males are apt to have it without discussing why females are carriers	Cannot describe why males are apt to have this trait or how females are carriers

8. At approximately the eight-cell stage of a zygote, although duplication and division continue, a process called differentiation starts. In differentiation, cells specialize, taking different forms and reproducing at various rates, depending on where they are located. For instance, some cells become part of an eye, others part of a finger, still others part of the brain or heart, etc.

	Good (5 pts)	Fair (3 pts)	Weak (1-0 pts)
Describe differentiation	Defines differentiation and gives at least two examples	Defines differentiation and gives one example	Does not define differentiation *or* does not give at least one example
Tell when it begins	Knows that it begins around the eight-cell stage of a zygote	Knows that it occurs during the zygote stage	Does not state when it occurs *or* gives the wrong stage

9. The first two weeks (14 days) of prenatal development are the germinal period. During this time, the zygote experiences cell duplication, division, and differentiation. The major milestone is that the outer cells become the placenta, which enables implantation, and the inner cells form a nucleus that will become the embryo. The embryonic period lasts from the third through the eighth prenatal week (day 14 to 56). The major developmental milestones are the formation of body structures and systems, including a rudimentary central nervous system and circulatory system. The fetal period starts at the ninth prenatal week and ends at birth. Fetal growth, sex organs, and refinement of all the body structures and systems are the major developmental accomplishments.

	Good (5 pts)	Fair (3 pts)	Weak (1-0 pts)

Describe the three prenatal developmental periods, including their lengths	Describes the three prenatal periods, including the length of each one	Describes just two of the prenatal periods or does not accurately describe the length of all three	Describes one or none of the periods or their lengths accurately or confuses the periods
Detail the milestones that occur during each period	Details the major milestones for each period	Details the milestones for two of the periods	Details the milestones for one or none of the periods or confuses them

10. The embryonic period covers the third through the eighth week of development. This period begins when a thin line (called the primitive streak) appears down the middle of the cell mass. That line becomes the neural tube, eventually becoming the central nervous system, including the brain and spine. It is during this time that differentiation leads to the formation and development of all major internal and external body systems. By the end of this period, all body systems are present and functioning with the exception of sex organs.

	Good (5 pts)	Fair (3 pts)	Weak (1-0 pts)
Describe the embryonic period	States the time period and what occurs to the embryo (differentiation into three layers)	States the time period *or* what occurs to the embryo	Cannot state the time period covered or what occurs to the embryo
Detail fetal status	States that all body systems are present with the exception of sex organs	States that all body systems are present—but includes the sex organs	Does not state that all body systems are functioning

11. A cesarean section (c-section) is also known as a surgical birth. Incisions through the mother's abdomen and uterus allow the fetus to be removed quickly, instead of being delivered through the vagina. Generally, cesareans are (1) safe for mother and baby and (2) can save a baby's life when the infant's head is too large for the pelvis. Advantages for hospitals include (3) ease in scheduling, (4) quicker than vaginal deliveries, and (5) more profitable than vaginal deliveries. Drawbacks include (1) complications after birth, (2) a reduction in breast-feeding, and (3) by age 3, children born by cesarean have double the rate of childhood obesity.

	Good (5 pts)	Fair (3 pts)	Weak (1-0 pts)
Explain the procedure	Explains the procedure, stating that it is also called a c-section or surgical birth	Explains the procedure without extra details	Does not explain the procedure
Discuss the risks and benefits	Discusses two or more risks and two or more benefits	Discusses two risks *or* two benefits *or* one risk and one benefit	Does not discuss at least one risk and one benefit

12. Symptoms of postpartum depression include a mother's deep sadness and feelings of inadequacy, including feeling burdened by baby care, ignoring the baby's needs, and

thoughts of neglecting or hurting the infant.

Possible outcomes for the baby include inadequate food and care, possible abuse or neglect, lack of social stimulation, and the likelihood of behavioral problems later on.

	Good (5 pts)	Fair (3 pts)	Weak (1-0 pts)
Describe the maternal symptoms of postpartum depression	Describes two of the symptoms	Describes one of the symptoms	Does not describe a symptom
Name two possible outcomes for the baby	Names two possible outcomes	Names one possible outcome	Does not name a possible outcome

13. Couvade is when fathers have biological experiences related to pregnancy and birth. For example, many fathers experience symptoms of pregnancy including weight gain, indigestion, and pain during the mother's labor. Also, fathers are vulnerable to depression.

	Good (5 pts)	Fair (3 pts)	Weak (1-0 pts)
Define couvade	Defines couvade	Gives a vague definition	Fails to define couvade
Give two examples	Gives two examples	Gives one example	Gives no example or an incorrect example

14. Down syndrome occurs when a person has three copies of chromosome 21. Some 300 distinct characteristics can result from that third chromosome 21. No individual with Down syndrome is identical to another, but the syndrome usually produces a thick tongue, a round face, slanted eyes, hearing problems, heart abnormalities, muscle weakness, and short stature. Intellectual development is often slow. Family context, educational efforts, and possibly medication can decrease the harm.

	Good (5 pts)	Fair (3 pts)	Weak (1-0 pts)
Identify how Down syndrome is a chromosomal condition	Explains how it is caused by three copies of chromosome 21	Is vague about how Down syndrome occurs or fails to mention the chromosome number	Cannot explain how Down syndrome occurs
List four characteristics associated with Down syndrome	Lists four characteristics from the list above	Lists three characteristics from the list above	Lists two or fewer characteristics from the list above

15. Behavioral teratogens are substances and conditions that do not cause physical defects in a developing fetus but increase the risk of harm to the child's brain, impairing the future child's intellectual and emotional functioning. For example, if a pregnant mother drinks alcohol, the fetus's brain could be damaged. Consequences of exposure to behavioral teratogens include hyperactivity, learning disabilities, and antisocial behavior.

	Good (5 pts)	Fair (3 pts)	Weak (1-0 pts)
Define behavioral teratogens	Defines the term and expresses that these cause brain damage, not physical defects	Defines the term such that it could also include physical defects	Does not accurately define the term
Name at least two behavioral teratogens	Names at least two behavioral teratogens	Names one behavioral teratogen	Does not name a common behavioral teratogen or gives an example of one that causes physical defects
State two potential consequences	States two potential consequences	States one potential consequence	Does not state a potential consequenc or states a physical defect

16. Teratogens include any influence on the pregnant mother, including malnutrition, stress, exposure to drugs, viruses, or pollutants. Teratogens increase the risk of harm to a developing embryo or fetus, but they do not always cause damage. (1) Timing is critical because some teratogens may cause damage only during a critical period. (2) The dose and/or frequency of exposure is important. Usually, the greater the dose or exposure, the greater the risk of fetal abnormalities. (3) Finally, the genes of the developing embryo or fetus can influence the effects of teratogens because some embryos or fetuses are more genetically vulnerable to certain teratogens.

	Good (5 pts)	Fair (3 pts)	Weak (1-0 pts)
Identify teratogens	Identifies three or more teratogens; answer may be specific (alcohol, crack, marijuana, pesticides, etc.)	Identifies two teratogens; answer may be specific (alcohol, crack, marijuana, pesticides, etc.)	Fails to identify more than one teratogen
Describe two factors that influence teratogens' impact	Describes two factors from the list above	Describes one factor from the list above	Does not describe a factor

17. Low birthweight can be caused by maternal drug use, especially smoking, maternal or fetal illness, underage (teen) mother, underweight, undereating, poor maternal nutrition, and environmental pollution.

	Good (5 pts)	Fair (3 pts)	Weak (1-0 pts)
Name four factors of low birthweight	Names four of the factors from the list above	Names three of the factors from the list above	Names two or fewer of the factors from th list above

18. Nature and nurture can both contribute to a person experiencing alcohol use disorder. In some individuals, genes (nature) can create the addictive desire to drink to excess. In addition, each human body metabolizes alcohol differently. Sex and gender also affect

the risk of the disorder. For biological reasons, women become drunk on less alcohol than men.

The environment and social factors (nurture) are important. For example, many cultures encourage men to drink but not women. In Japan, both sexes have the same genes for metabolizing alcohol, yet women drink only about one-tenth as much as men. When women of Japanese ancestry live in the United States, their alcohol consumption increases.

	Good (5 pts)	Fair (3 pts)	Weak (1-0 pts)
Explain how nature and nurture can result in alcoholism	Explains how both nature and nurture can contribute to alcoholism	Explains how either nature *or* nurture can contribute to alcoholism	Cannot explain how either contribute to alcoholism *or* confuses the terms

1. Units of instructions for cells that are located on chromosomes are _____.

2. Almost every human body cell contains _____ chromosomes.

3. Each variation of a gene is called a(n) _____.

4. A sperm or an ovum that can produce a new individual when combined with another from the other sex is called a _____.

5. The first 22 chromosomes contain hundreds of genes in the same positions and sequence. If the code of the gene from one parent is exactly like the code on the same gene from the other parent, the gene pair is _____.

6. Genes that have various alleles are called _____.

7. The first 22 chromosomes contain hundreds of genes in the same positions and sequence. If the code of the gene from one parent differs from the code on the same gene from the other parent, the gene pair is _____.

8. Small variations, mutations, or repetitions in DNA code in the base pairs or triplets that could make a notable difference in the proteins and thus, eventually, in the person are called _____.

9. A person's collection of genes is referred to as his or her _____.

10. An individual's appearance, behavior, personality, intelligence, and all other traits is their _____.

11. The entire packet of instructions that make a living organism is called the _____.

12. If the 23rd pair of chromosomes is _____, the individual will be female.

13. Jenny learned in her high school science class that a female has _____ on the 23rd pair of chromosomes.

14. If the 23rd pair of chromosomes is _____, the individual will be male.

15. Grace learned in her high school science class that a male has _____ on the 23rd pair of chromosomes.

16. Michelle and Greg are having a baby and are hoping for a boy. _____ is responsible for determining the sex of the baby.

17. Identical twins are also called _____ twins.

18. Jenny and Tina are identical twins. They are the result of _____.

19. Monozygotic twins have _____ percent of their genes in common.

20. Fraternal twins are also called _____ twins.

21. Brandon and Brianna are fraternal twins. They are the result of _____.

22. Katie rushed into the house after school and announced to her parents, “So many genes make me who I am, which means my personality is _____!”

23. _____ refers to a trait that is affected by many factors, both genetic and environmental, that enhance, halt, shape, or alter the expression of genes, resulting in a phenotype that may differ markedly from the genotype.

24. When the effects of genes add up to influence the phenotype, they are called _____ genes.

25. The interaction of a heterozygous pair of alleles in such a way that the phenotype reflects one allele more than the other is referred to as a _____.

26. When someone inherits a recessive gene that is not expressed in the phenotype, that person is a(n) _____ of that gene.

27. Hunter has inherited genes that put him at risk for developing diabetes. However, he does not develop diabetes because of his healthy diet and exercise. This example demonstrates that human characteristics, including diabetes, are _____.

28. Cells that are able to produce any other cells are called _____cells.

29. A high school science teacher asks the students to name the cells that could be used to produce any other cell in the body. If the students respond with _____ cells, they will be correct.

30. After about the eight-cell stage within the zygote, cells start to _____, meaning that they take different forms and reproduce at various rates depending on where they are located.

31. The process in which the developing organism embeds itself into the lining of the uterus is called _____.

32. A _____ uses sound waves to generate an image of a fetus in utero.

33. The age at which a fetus may survive if born too early is known as the _____.

34. The fetus usually gains at least _____ pounds in the third trimester.

35. On average, a first baby is born after _____ hours of active labor.

36. Birth attendants assess the newborn's health at one minute and five minutes after birth using the _____.

37. A surgical birth, in which incisions through the mother's abdomen and uterus allow the fetus to be removed quickly, is referred to as a _____.

38. By 2008 in the United States, the rate of c-sections had risen to _____ percent.

39. Violeta is in labor and has requested a pain reliever known as a(n) _____, which is an injection given in the spine to alleviate pain.

40. Epidurals, often used in hospital births to manage pain during childbirth, have been shown to decrease the newborn's readiness to _____.

41. Labor that is started, speeded, or strengthened with a drug is referred to as _____.

42. Most births in the United States take place in _____.

43. In the United States, less than 1 percent of births occur at _____.

44. A woman who helps with the birth process, who is likely to arrive at the woman's home during early labor and later work alongside a hospital's staff, is called a _____.

45. The _____ is a test often administered to newborns that measures responsiveness and records 46 behaviors, including 20 reflexes.

46. A newborn's involuntary response to a particular stimulus is a(n) _____.

47. After giving birth to her first child, Malia experienced a deep sadness that made caring for her child (and herself) difficult. Her husband called the family's doctor, who suggested Malia may have _____.

48. A father's presence at a child's birth _____ the likelihood of birth complications.

49. Malek gained weight and experienced nausea when his wife, Kayla, was pregnant. Malek experienced _____.

50. Trisomy-21 is also called _____.

51. _____ is a condition in which a person has 47 chromosomes instead of the usual 46, with three rather than two chromosomes at the 21st position.

52. The cognitive deficits caused by the genetic condition of _____ are the most common form of inherited intellectual disability.

53. Any agent or condition that increases the risk of prenatal abnormalities and birth complications is called a _____.

54. Agents and conditions that can harm the prenatal brain, impairing the future child's intellectual and emotional functioning, are called_____ teratogens.

55. Some teratogens are not harmful unless exposure reaches a certain level; this is called the _____ effect.

56. The cluster of birth defects, including abnormal facial characteristics, slow physical growth, and intellectual disabilities, that may occur in the child of a woman who drinks alcohol while pregnant is called _____ .

57. A maternal diet adequate in folic acid substantially reduces the risk of fetal _____defects.

58. Juan is 5 years old and is confined to a wheelchair because he can't control any of his muscles. Juan's impaired motor control was the result of damage to his brain's motor centers at birth. Juan has _____.

59. When Elyse was born, she suffered a lack of oxygen for a brief amount of time. Elyse experienced _____.

60. The result of a laboratory test that reports something as false when in fact it is not false is referred to as a _____.

61. The term for a baby whose birthweight is significantly lower than expected, given the time since conception, is _____.

62. Research indicates that alcohol use disorder is caused by _____.

63. The statistic that indicates how much of a variation in a particular trait within a particular population and in a particular context and era can be traced to genes is _____.

64. As video games and studying have kept more American children indoors, the rate of _____ has increased.

Answer Key

1. Genes
2. 46
3. allele
4. gamete
5. homozygous
6. polymorphic
7. heterozygous
8. copy number variations
9. genotype
10. phenotype
11. genome
12. XX
13. XX
14. XY
15. XY
16. Greg
17. monozygotic
18. one ovum fertilized by one sperm that splits apart
19. 100
20. dizygotic
21. two separate ova that were fertilized by two separate sperm
22. polygenic
23. Multifactorial
24. additive
25. dominant–recessive pattern
26. carrier
27. epigenetic
28. stem
29. stem
30. differentiate
31. implantation
32. sonogram
33. age of viability
34. 4.5 (4 1/2)
35. 12
36. Apgar scale
37. cesarean section (c-section)
38. 34
39. epidural
40. suck (breast-feed)
41. induced
42. hospital labor rooms
43. home
44. doula

45. Brazelton Neonatal Behavioral Assessment Scale (NBAS)
46. reflex
47. postpartum depression
48. reduces
49. couvade
50. Down syndrome
51. Down syndrome
52. fragile X syndrome
53. teratogen
54. behavioral
55. threshold
56. fetal alcohol syndrome (FAS)
57. neural-tube
58. cerebral palsy
59. anoxia
60. false negative
61. small for gestational age
62. a combination of nature and nurture
63. heritability
64. nearsightedness (myopia)

1. The single cell formed from the union of two gametes, a sperm and an ovum, is called a _____.
   A) chromosome
   B) phenotype
   C) genotype
   D) zygote

2. Every person begins life as a single cell, which is called a _____.
   A) chromosome
   B) zygote
   C) genotype
   D) deoxyribonucleic acid (DNA)

3. All living things are composed of cells. The work of cells is done by _____.
   A) proteins
   B) zygotes
   C) genotypes
   D) deoxyribonucleic acid (DNA)

4. Each molecule of deoxyribonucleic acid (DNA) is stored on a(n) _____.
   A) chromosome
   B) RNA
   C) gene
   D) zygote

5. One of the 46 molecules of DNA (in 23 pairs) that virtually each cell of the human body contains and that, together, contain all the genes is called a(n) _____.
   A) chromosome
   B) allele
   C) genotype
   D) zygote

6. Each human body cell contains _____.
   A) 46 pairs of chromosomes
   B) 46 chromosomes
   C) 23 chromosomes
   D) 20 pairs of chromosomes

7. A small section of a chromosome that is the basic unit for the transmission of heredity is a _____.
   A) chromosome
   B) gene
   C) genotype
   D) zygote

8. The first 22 chromosomes contain hundreds of genes in the same positions and sequence. If the code of the gene from one parent is exactly like the code on the same gene from the other parent, the gene pair is _____.
   A) homozygous
   B) heterozygous
   C) monozygotic
   D) dizygotic

9. A variation that makes a gene different in some way from other genes for the same characteristics is a(n) _____.
   A) chromosome
   B) zygote
   C) genotype
   D) allele

10. Differences among people begin with alleles, which can be caused by transpositions, deletions, or repetitions of base pairs, making some genes _____.
   A) polymorphic
   B) multimorphic
   C) allelemorphic
   D) transmorphic

11. The first 22 chromosomes contain hundreds of genes in the same positions and sequence. If the code of the gene from one parent differs from the code on the same gene from the other parent, the gene pair is _____.
   A) homozygous
   B) heterozygous
   C) monozygotic
   D) dizygotic

12. Each gene directs the formation of specific proteins made from a string of _____ amino acids.
    A) 10
    B) 20
    C) 30
    D) 40

13. The instructions for making amino acids are on about 3 billion pairs of chemicals called _____.
    A) couple pairs
    B) foundation pairs
    C) base pairs
    D) copy pairs

14. The process of methylation can do all of the following to genetic instructions EXCEPT _____.
    A) alter them
    B) connect them
    C) remove them
    D) transcribe them

15. An individual's genetic inheritance is called a(n) _____.
    A) phenotype
    B) allele
    C) genotype
    D) gamete

16. The _____ is the person's appearance, behavior, and brain and body functions.
    A) phenotype
    B) allele
    C) genotype
    D) gamete

17. Isaac and Xavier are playing basketball. Isaac shoots the ball and Xavier blocks the shot. Isaac says, “Wow, I didn't realize how tall you were until you did that!” Xavier's comment refers to Isaac's _____.
    A) phenotype
    B) allele
    C) genotype
    D) gamete

18. An individual's phenotype is dependent on _____.
    A) an individual's genes
    B) the environment
    C) an individual's genes and the environment
    D) an individual's genes during prenatal development and the environment postnatally

19. The name of the full set of genes that provides the instructions for making an individual member of a certain species is the _____.
    A) phenotype
    B) genotype
    C) genome
    D) allele

20. The worldwide effort to map the complete human genetic code was called the _____.
    A) Hap Map
    B) Apgar scale
    C) Human Genome Project
    D) Brazelton Assessment

21. Each human has about _____ genes.
    A) 10,000
    B) 20,000
    C) 30,000
    D) 40,000

22. On the 23rd pair of chromosomes, males have _____.
    A) two X chromosomes
    B) two Y chromosomes
    C) an X and a Y chromosome
    D) just a Y chromosome

23. On the 23rd pair of chromosomes, females have _____.
    A) two X chromosomes
    B) two Y chromosomes
    C) an X and a Y chromosome
    D) just a Y chromosome

24. On the 23rd pair of chromosomes, _____ have two X chromosomes.
    A) females
    B) embryos
    C) sperm
    D) males

25. Males have one X and one Y chromosome on _____.
    A) each sperm
    B) the 43rd chromosome
    C) the 23rd pair of chromosomes
    D) each stem cell

26. Brian and Diana are having a baby and are hoping for a boy. Who is responsible for determining the sex of the baby?
    A) Diana
    B) Brian
    C) both of them
    D) neither of them

27. Eric learned in his college biology class that, with respect to the sex chromosomes, the _____.
    A) Y chromosome is larger than the X chromosome and has more genes
    B) X chromosome is larger than the Y chromosome and has more genes
    C) X and Y chromosomes are the same size, but the X chromosome has more genes
    D) X and Y chromosomes are the same size and have the same number of genes

28. Couples can select the sex of a child by all of the following methods EXCEPT _____.
    A) inactivating X or Y sperm before conception
    B) selecting only X eggs for fertilization
    C) aborting XX or XY fetuses
    D) undergoing in vitro fertilization and then inserting only male or female embryos

29. In China, a “one-child” policy implemented in about 1979 cut the birth rate in half. Although the intended goal of reducing poverty was achieved, several unintended consequences were identified. All of the following were unintended consequences EXCEPT for _____.
    A) far more unmarried young men in China than women
    B) millions of newborn girls being placed up for adoption
    C) males living longer than females
    D) increased abortions of female fetuses

30. Identical twins are also called _____ twins.
    A) monozygotic
    B) dizygotic
    C) zygotic
    D) gamete

31. Juan and Joaquin are identical twins. They are the result of _____.
    A) one ovum fertilized by one sperm that split into two zygotes
    B) two separate ova that were fertilized by two different sperms
    C) one ovum that was fertilized by two sperms
    D) two ova that were fertilized by one sperm

32. Fraternal twins are also called _____ twins.
    A) monozygotic
    B) dizygotic
    C) zygotic
    D) gamete

33. Blaire rushed into the house after school and announced to her parents, “My personality is _____! So many genes make me who I am!”
    A) polygenic
    B) nonadditive
    C) multifactorial
    D) monozygotic

34. Elyse and Ellen are fraternal twins. They are the result of _____.
    A) one ovum fertilized by one sperm that split into two zygotes
    B) two separate ova that were fertilized by two different sperm
    C) one ovum that was fertilized by two sperms
    D) two ova that were fertilized by one sperm

35. Allyson and Miles were planning on starting a family. Allyson's extended family has several sets of dizygotic twins. Allyson asked her doctor what could cause her to have dizygotic twins. The doctor informed her that the likelihood of having dizygotic twins will be determined by _____.
    A) her husband's genes
    B) her genes
    C) the environment
    D) an interaction between her genes and the environment

36. The interaction of a heterozygous pair of alleles in such a way that the phenotype reflects one allele more than the other is referred to as a(n) _____.
    A) additive pattern
    B) multifactorial pattern
    C) dominant–recessive pattern
    D) polygenic pattern

37. Which female is more likely to naturally conceive dizygotic twins?
    A) a woman from Japan
    B) a woman from Korea
    C) a woman from China
    D) a woman from America

38. Which female is more likely to naturally conceive dizygotic twins?
    A) a 20-year-old woman
    B) a 25-year-old woman
    C) a 30-year-old woman
    D) a 35-year-old woman

39. After twins are conceived, their chance of survival until birth depends on the prenatal circumstances. An early sonogram might reveal two developing organisms, but later only one embryo continues to grow. This is referred to as the _____ twin phenomenon.
    A) vanishing
    B) disappearing
    C) terminated
    D) missing

40. Dizygotic twins have _____ of their genes in common.
    A) 25 percent
    B) 50 percent
    C) 75 percent
    D) 100 percent

41. Twins who are the same sex and are similar in appearance and traits are _____.
    A) monozygotic twins
    B) dizygotic twins
    C) monozygotic or dizygotic twins
    D) not possible to determine if they are monozygotic or dizygotic twins

42. Almost every trait is _____, which means it is affected by many genes.
    A) polygenic
    B) nonadditive
    C) X-linked
    D) monozygotic

43. A trait that is affected by many factors, both genetic and environmental, that enhance, halt, shape, or alter the expression of genes, resulting in a phenotype that may differ markedly from the genotype, is said to be _____.
    A) polygenic
    B) nonadditive
    C) multifactorial
    D) monozygotic

44. Akira was born with genes that enabled muscle coordination, but his environmental experiences never supported the development of his potential athletic ability, so he never became a professional athlete. This example illustrates the concept of a trait being _____.
    A) polygenic
    B) nonadditive
    C) multifactorial
    D) monozygotic

45. When the effects of genes add up to make the phenotype, they are called _____ genes.
    A) dominant
    B) recessive
    C) additive
    D) nonadditive

46. Vinaya learned from her science teacher that her height probably resulted from about 180 genes, each contributing a tiny amount of genetic information. Vinaya learned that her height resulted from _____.
    A) additive genes
    B) dominant genes
    C) recessive genes
    D) nonadditive genes

47. Brown-eyed Alma has a blue-eyed mother and a brown-eyed father. In this case, her brown eyes were determined by a _____ allele.
    A) dominant
    B) recessive
    C) dominant–recessive
    D) dizygotic

48. Laurel has a recessive gene in her genotype that is not expressed in her phenotype. She is a(n) _____ of that gene.
    A) recipient
    B) carrier
    C) expressor
    D) reactor

49. A gene carried on the X chromosome is said to be _____.
    A) X-linked
    B) polygenic
    C) multifactorial
    D) recessive

50. Michael is color-blind. His gene for color blindness is most likely a _____.
    A) dominant gene on his X chromosome
    B) dominant gene on his Y chromosome
    C) recessive gene on his X chromosome
    D) recessive gene on his Y chromosome

51. _____ are more likely to be carriers of X-linked traits, and _____ are more likely to express them.
    A) Females; males
    B) Females; females
    C) Males; females
    D) Males; males

52. Epigenetics means that a trait _____.
    A) is determined by genes alone
    B) is determine by the environment alone
    C) is determined by genes and the environment
    D) is determined by genes more than the environment

53. Oliver has inherited genes that put him at risk for developing diabetes, but because of his healthy diet and exercise he is not diabetic. This example demonstrates that human characteristics, including diabetes, are _____.
    A) polygenic
    B) nonadditive
    C) multifactorial
    D) epigenetic

54. In describing prenatal development to her friends, Michonne wants to identify the three main periods of prenatal development in order from conception to birth. Michonne uses the following order:
    A) embryonic, germinal, and fetal
    B) fetal, embryonic, and germinal
    C) germinal, embryonic, and fetal
    D) germinal, fetal, and embryonic

55. Many obstetricians date the onset of pregnancy from the date of _____.
    A) conception
    B) the woman's last menstrual period
    C) implantation
    D) when the woman had intercourse

56. Within hours after conception, the 23 pairs of chromosomes within the zygote _____, forming two complete sets of the genome.
    A) divide
    B) duplicate
    C) differentiate
    D) detach

57. Cells that are able to produce any other cells are called _____cells.
    A) polymorphic
    B) foundation
    C) stem
    D) allele

58. A high school science teacher asks her students to name the cells that can be used to produce any other cell in the body. If the students respond with _____ cells, they will be correct.
    A) polymorphic
    B) foundation
    C) stem
    D) allele

59. After about the eight-cell stage within the zygote, cells start to _____, meaning that they take different forms and reproduce at various rates depending on where they are located.
    A) divide
    B) duplicate
    C) differentiate
    D) detach

60. Akiho loves to share information that she has learned from school with her parents. At dinner one day, she tells her family that she learned about cell differentiation in science class. Specifically, she tells them that once cells differentiate, _____.
    A) they can still transform into different cells
    B) only cells in the brain can still transform into different cells
    C) they can transform into stem cells
    D) they can no longer transform into different cells

61. During the germinal period of prenatal development, some cells become part of the brain, some become part of the leg, some become part of the stomach, and so on. The term for this process is _____.
    A) duplication
    B) division
    C) differentiation
    D) specialization

62. About _____ percent of natural conceptions never implant.
    A) 10
    B) 25
    C) 50
    D) 75

63. About a week after conception, the outer layer of the multiplying cells forms a protective circle, or shell, that will become the _____.
    A) placenta
    B) umbilical cord
    C) vernix
    D) infant

64. The germinal period ends approximately _____ after conception.
    A) 2 days
    B) 3 months
    C) 2 weeks
    D) 12 weeks

65. Blake just learned that she is 6 weeks pregnant. Her developing baby is in the _____ period of prenatal development.
    A) germinal
    B) embryonic
    C) fetal
    D) second

66. At the onset of the embryonic period, the _____ appear(s). It will eventually become the neural tube.
    A) stem cells
    B) spinal cord
    C) primitive streak
    D) placenta

67. As part of embryonic development, the neural tube will become the _____.
    A) reproductive organs
    B) intestinal tract
    C) backbone, legs, and arms
    D) central nervous system, including the brain and spine

68. In the _____ week following conception, the head begins to take shape.
    A) fourth
    B) fifth
    C) sixth
    D) seventh

69. In the fourth week after conception, a minuscule blood vessel that will become the _____ begins to pulsate.
    A) lungs
    B) stomach
    C) kidneys
    D) heart

70. The longest period of prenatal development is the _____ period.
    A) embryonic
    B) fetal
    C) zygotic
    D) germinal

71. The third period of gestation is the _____ period.
    A) zygotic
    B) embryonic
    C) germinal
    D) fetal

72. By the end of the ____ prenatal month, sex organs develop and are soon visible via a sonogram.
    A) second
    B) third
    C) fourth
    D) fifth

73. During the fetal period of development, ____.
    A) the brain goes through a process of regeneration
    B) synapses in the brain decrease in number
    C) the brain increases in size
    D) the number of neurons in the brain decreases

74. During mid-pregnancy, the brain increases about six times in size and develops many new neurons in a process called _____.
    A) couvade
    B) synaptogenesis
    C) viability
    D) neurogenesis

75. The age of viability is the time when the preterm newborn _____.
    A) might survive outside the uterus
    B) begins to move
    C) will be born without defects
    D) has reached the embryonic period

76. Horace was born 26 weeks after conception. He now is a healthy, happy 2-year-old. Horace's ability to survive after being born so early was due in part to his reaching the _____.
    A) term of postnatal development
    B) germinal period
    C) neurogenesis point
    D) age of viability

77. The critical factor in attaining the age of viability is _____.
    A) weighing at least 5 pounds (2.3 kg)
    B) attaining advances in neurological functioning
    C) having functioning digestive and respiratory systems
    D) surviving at least 28 weeks past conception

78. On average, fetuses gain about _____ pounds during the last trimester of pregnancy, which brings the average birth weight to about 7.5 pounds.
    A) 1.5
    B) 2.5
    C) 4.5
    D) 6.5

79. Abed's mom is four months pregnant. Abed is anxious for the new baby and asks, “How many more months until I'm a big brother?” His mother says he has to wait about _____ more months.
    A) 2
    B) 3
    C) 4
    D) 5

80. At around 38 weeks after conception, the _____ starts the sequence of events that prepares the fetus for delivery and starts labor.
    A) fetal brain
    B) maternal brain
    C) placenta
    D) germinal period

81. The average length of active labor in a first birth is _____.
    A) several days
    B) about 12 hours
    C) about 8 hours
    D) a few minutes

82. When healthy babies are born, they usually _____.
    A) do not breathe on their own until the umbilical cord is cut
    B) do not cry until the umbilical cord is cut
    C) breathe and cry on their own immediately
    D) breathe on their own, and cry when the umbilical cord is cut

83. In the third stage of labor, the _____.
    A) cervix begins to dilate
    B) baby's head moves into the birth canal
    C) mother experiences intense contractions
    D) placenta is delivered

84. The birth process depends on all of the following EXCEPT _____.
    A) customs of the culture
    B) position and size of the fetus
    C) the skill of the birth attendant
    D) parents' genetic heritage

85. The Apgar scale is used at one minute and five minutes after birth to _____.
    A) evaluate the newborn's sensory abilities
    B) evaluate the health of the new mother
    C) help the mother recover from childbirth
    D) evaluate the health of the newborn

86. Abdul's score on the five-minute Apgar scale was 4. This means Abdul is _____.
    A) experiencing good health
    B) a slow-to-warm-up infant
    C) in need of emergency medical attention
    D) in average health

87. A surgical birth, in which incisions through the mother's abdomen and uterus allow the fetus to be removed quickly, is referred to as a(n) _____.
    A) epidural
    B) cesarean section
    C) induced labor
    D) doula

88. Compared with vaginal births, c-section births _____.
    A) are less expensive
    B) increase the risk of complications after birth
    C) usually take longer
    D) are less safe for the baby

89. Epidurals, often used in hospital births to manage pain during childbirth, have been shown to _____.
    A) help prevent unnecessary c-sections
    B) encourage breast-feeding from the beginning
    C) decrease the newborn's readiness to suck
    D) induce labor

90. Brittany was two weeks past her due date. The doctor decided it was best to _____ labor because the fetus was growing too large.
    A) postpone
    B) induce
    C) skip over
    D) decrease

91. Labor that is started, speeded, or strengthened with a drug is referred to as _____.
    A) a home birth
    B) induced labor
    C) a cesarean section
    D) an epidural

92. Which of the following is TRUE about rates of c-sections and epidurals?
    A) They have been relatively steady over the past three decades.
    B) They are the same in the United States as in most other developed nations.
    C) They vary by doctor, hospital, day of the week, and region.
    D) They are higher for births attended by midwives.

93. Most births in the United States take place in _____.
    A) birthing centers
    B) hospital labor rooms
    C) homes
    D) pools of water

94. An alternative to giving birth in a hospital is to arrange to give birth at home. In the United States, less than _____ of births occur at home.
    A) 1 percent
    B) 5 percent
    C) 10 percent
    D) 15 percent

95. A person who supports a mother through the birth process from early labor at home through delivery at home or in a hospital is called a _____.
    A) humanitarian
    B) doctor
    C) postpartum nurse
    D) doula

96. Amy went into labor at home. Joan arrived soon after and began to time her contractions and give gentle massages. She assisted Amy and her partner when it was time to leave for the hospital and accompanied them through the birth process. Joan was Amy's _____.
    A) postpartum nurse
    B) doctor
    C) couvade
    D) doula

97. Research indicates that a doula-assisted birth can benefit _____.
    A) low-income women
    B) immigrant women
    C) unpartnered women
    D) all women

98. The _____ is a test often administered to newborns that measures responsiveness and records 46 behaviors, including 20 reflexes.
    A) gamete
    B) Brazelton Neonatal Behavioral Assessment Scale (NBAS)
    C) fragile X
    D) Apgar scale

99. Josephine just had a baby and now is experiencing a sense of inadequacy and sadness. She may have _____.
    A) couvade
    B) behavioral teratogens
    C) kangaroo care
    D) postpartum depression

100. Studies indicate that _____ may reduce maternal depression.
    A) breast-feeding
    B) having a home birth
    C) couvade
    D) epidurals

101. Lucia had a baby three weeks ago. She has been feeling sad and inadequate as a mother, which has made caring for her newborn difficult. Lucia may be experiencing _____.
    A) fragile X syndrome
    B) postpartum depression
    C) Down syndrome
    D) couvade

102. Postpartum depression _____.
    A) is a normal development and no cause for concern
    B) has no treatment
    C) does not typically interfere with the care of a newborn
    D) can be reduced by successful breast-feeding

103. A father's presence at a child's birth _____.
    A) has no impact on birth complications
    B) only has an impact on birth complications if the mother and father are married
    C) reduces the likelihood of birth complications
    D) increases the likelihood of birth complications

104. The phenomenon in which fathers experience symptoms of pregnancy and birth is known as _____.
    A) postpartum depression
    B) couvade
    C) false labor
    D) cerebral palsy

105. When his wife was pregnant, Teague experienced weight gain and indigestion. When she gave birth, he felt sharp physical pain as well. Teague was experiencing _____.
    A) postpartum depression
    B) couvade
    C) false labor
    D) the threshold effect

106. In 22 of the 23 pairs of chromosomes, both members of the pair are closely matched. Each of these 44 chromosomes is called a(n) _____.
    A) allele
    B) gamete
    C) autosome
    D) blastocyst

107. Approximately once in every _____ births, a newborn survives with 45, 47, or even 48 or 49 chromosomes instead of the usual 46.
    A) 50
    B) 200
    C) 500
    D) 1,000

108. The most common extra-chromosome condition is _____.
    A) Down syndrome
    B) nearsightedness
    C) fragile X syndrome
    D) Tourette syndrome

109. Down syndrome is also called _____.
    A) trisomy-12
    B) trisomy-13
    C) trisomy-21
    D) trisomy-31

110. An individual with an extra chromosome on the 21st pair of chromosomes has _____.
    A) Down syndrome
    B) nearsightedness
    C) fragile X syndrome
    D) Tourette syndrome

111. One in every _____ infants is born with only one sex chromosome or with three or more, which creates a chromosomal abnormality.
    A) 50
    B) 200
    C) 500
    D) 1,000

112. Genes with various repeats or deletions of base pairs are referred to as _____.
    A) polymorphic
    B) autosomes
    C) polygenic
    D) copy number variations

113. A fatal central nervous system disorder caused by a copy number variation—more than 35 repetitions of a particular set of three base pairs—is _____.
    A) Down syndrome
    B) nearsightedness
    C) fragile X syndrome
    D) Huntington disease

114. The cognitive deficits caused by the genetic condition of _____ are the most common form of inherited intellectual disability.
    A) Down syndrome
    B) nearsightedness
    C) fragile X syndrome
    D) Huntington disease

115. A teratogen is any agent or condition that increases the risk for _____.
    A) prenatal abnormalities
    B) damage to the placenta
    C) extra chromosomes
    D) male infertility

116. Ava is one month pregnant and consults with her doctor about the different categories of teratogens. The doctor tells her that all of the following are categories of teratogens EXCEPT _____.
    A) drugs
    B) pollutants
    C) the media
    D) viruses

117. Agents and conditions that can harm the prenatal brain, impairing the future child's intellectual and emotional functioning, are called _____.
    A) chromosomal abnormalities
    B) genetic mutations
    C) cell differentiation
    D) behavioral teratogens

118. Hannah is 5 years old. She has been diagnosed with ADHD and shows signs of learning disabilities. Her doctor suggests that Hannah's problems could be the result of prenatal exposure to _____, though he stresses that the link is not straightforward at this time.
    A) chromosomal abnormalities
    B) genetic abnormalities
    C) cell differentiation
    D) behavioral teratogens

119. During prenatal development, teratogens _____.
    A) increase the risk of prenatal abnormalities
    B) decrease the risk of prenatal abnormalities
    C) always cause prenatal abnormalities
    D) do not cause prenatal abnormalities

120. The first days and weeks after conception (the germinal and embryonic periods) are _____ for body formation, but health during the entire fetal period affects the _____.
    A) sensitive; heart
    B) critical; brain
    C) sensitive; brain
    D) critical; heart

121. Chantal and Larry are considering having a baby. Chantal's doctor recommends that they stop using recreational drugs and update their immunizations _____.
    A) before Chantal gets pregnant
    B) as soon as Chantal knows she is pregnant
    C) anytime during the first trimester of pregnancy
    D) as soon as the baby is born

122. Gabby received high-quality prenatal care from the care team at her local hospital. She was informed about what to eat and what to do. They also coached her on what to _____, such as cigarette smoking and very high stress.
    A) avoid
    B) seek out
    C) experience
    D) continue

123. Some teratogens have a threshold effect, which means that they are _____.
    A) harmful no matter what the level of exposure
    B) rarely harmful
    C) harmless until exposure reaches a certain level
    D) always harmless

124. Skye is pregnant yet she still has four alcoholic drinks each day. Her baby may be at increased risk for the development of _____.
    A) fetal alcohol syndrome
    B) fetal anoxia syndrome
    C) fetal alcohol situation
    D) functional alcohol syndrome

125. Low folic acid during pregnancy can result in _____.
    A) heart defects
    B) lung defects
    C) limb deformities
    D) neural-tube defects

126. Alice is pregnant and wants to ensure that she does everything she can to prevent the occurrence of a neural-tube defect in her child. She makes sure that she has the proper amount of _____ in her diet.
    A) vitamin D
    B) zinc
    C) folic acid
    D) vitamin K

127. A woman carrying dizygotic twins drinks alcohol. The twins' blood alcohol levels are equal, yet one twin may be more severely affected than the other because their alleles for the enzyme that metabolizes alcohol differ. This is evidence that the _____ influence the effects of teratogens.
    A) kinds of substances
    B) genes of the parent
    C) genes of the embryo/fetus
    D) doses of teratogen

128. Sammy is 5 years old and spends his day in a wheelchair, assisted by an aid. Sammy can't control any of his muscles due to brain damage, but he is extremely intelligent. Sammy's condition has been evident since birth. Sammy has _____.
    A) anoxia
    B) cerebral palsy
    C) Huntington disease
    D) Parkinson's disease

129. Anoxia refers to _____.
    A) cerebral hemorrhaging
    B) signs of cerebral palsy
    C) a lack of oxygen
    D) toxic substances in the bloodstream

130. Cerebral palsy was once thought to be the result of something that happened during the birth procedure, but we now know it can result from each of the following EXCEPT _____.
    A) genetic sensitivity
    B) teratogens
    C) maternal infection
    D) Huntington disease

131. When Alexia was born, she suffered a lack of oxygen for a small amount of time. Alexia experienced _____.
    A) cerebral hemorrhaging
    B) cerebral palsy
    C) couvade
    D) anoxia

132. With respect to test results, a false positive is the result of a laboratory test that reports something as _____.
    A) true when in fact it is not true
    B) false when in fact it is not false
    C) true when in fact it is true
    D) false when in fact it is false

133. Babies born under 1,000 grams (2 pounds 3 ounces) are considered _____.
    A) low birthweight
    B) very low birthweight
    C) extremely low birthweight
    D) ultra low birthweight

134. Babies born slightly under 1,500 grams (3 pounds 5 ounces) are considered _____.
    A) low birthweight
    B) very low birthweight
    C) extremely low birthweight
    D) ultra low birthweight

135. Babies born slightly under 2,500 grams are considered _____.
    A) low birthweight
    B) very low birthweight
    C) extremely low birthweight
    D) ultra low birthweight

136. A baby born three or more weeks early is called _____.
    A) premature
    B) preterm
    C) low birthweight
    D) small for gestational age

137. A baby whose birthweight is significantly lower than expected given the time since conception is referred to as _____.
    A) preterm
    B) premature
    C) low birthweight
    D) small for gestational age

138. Bruno and Juliana moved to the United States from Mexico two years ago and just had their first baby. Although Bruno and Juliana's SES is lower than their native-born peers, their baby was born at a healthy weight, in part because of the support of their social network. This phenomenon is called the _____.
    A) immigrant paradox
    B) heritability paradox
    C) native-born paradox
    D) SES paradox

139. Cigarette smoking is implicated in _____ percent of all low-birthweight births worldwide.
    A) 10
    B) 15
    C) 20
    D) 25

140. Statistically, which woman is MOST apt to have a baby with low birthweight?
    A) Ashley, who is 27 years old and middle-class SES
    B) Jody, who has been diagnosed with diabetes
    C) Kate, who regularly misses meals
    D) Delfina, who is a Hispanic immigrant

141. Adults who were low-birthweight babies have higher rates of _____.
    A) diabetes
    B) malnutrition
    C) normal-range weight
    D) obesity

142. Research indicates that alcohol use disorder is caused by _____.
    A) nature only
    B) nurture only
    C) a combination of nature and nurture
    D) poor moral character

143. An individual's inherited biochemistry reacts to alcohol in different ways, causing various reactions in humans. These include all of the following EXCEPT _____.
    A) sleep
    B) nausea
    C) hunger
    D) relaxation

144. Which of the following statements is true about alcohol use disorder?
    A) Alcohol use disorder is polygenic and culture is a pivotal factor.
    B) Alcohol use disorder is polygenic and genes are a pivotal factor.
    C) Alcohol use disorder is X-linked and culture is a pivotal factor.
    D) Alcohol use disorder is X-linked and genes are a pivotal factor.

145. For biological reasons, such as metabolism, women become drunk on _____ than men.
    A) more alcohol
    B) less alcohol
    C) the same amount of alcohol
    D) more alcohol in the summer and less alcohol in the winter

146. All of the following affect vision EXCEPT _____.
    A) genes
    B) age
    C) culture
    D) gender

147. Eyeballs change shape at typical stages of development, including puberty and middle adulthood. This makes it more likely that _____ will increase at puberty and _____ will decrease during middle adulthood.
    A) nearsightedness; farsightedness
    B) farsightedness; nearsightedness
    C) nearsightedness; nearsightedness
    D) farsightedness; farsightedness

148. _____ is the statistic that indicates how much of the variation in a particular trait in a particular population and in a particular context can be traced to genes.
    A) A correlation
    B) Heritability
    C) The mean
    D) Probability

149. The heritability for human traits, such as nearsightedness, _____.
    A) is the same in every culture
    B) can differ between cultures
    C) is not influenced by cultural factors
    D) will always be different between cultures

150. Eight-year-old Joe has no difficulty seeing things near him but sometimes struggles to see things in the distance. When Joe has his eyes checked, he is told that he does not yet need corrective lenses for nearsightedness. Instead, drawing on current research, the ophthalmologist suggests that he should first try to _____.
    A) do homework in a very brightly lit room
    B) watch television on a larger screen
    C) play outside more
    D) avoid reading small print

Answer Key

1. D
2. B
3. A
4. A
5. A
6. B
7. B
8. A
9. D
10. A
11. B
12. B
13. C
14. C
15. C
16. A
17. A
18. C
19. C
20. C
21. B
22. C
23. A
24. A
25. C
26. B
27. B
28. B
29. C
30. A
31. A
32. B
33. A
34. B
35. B
36. C
37. D
38. D
39. A
40. B
41. C
42. A
43. C
44. C

45. C
46. A
47. A
48. B
49. A
50. C
51. A
52. C
53. D
54. C
55. B
56. B
57. C
58. C
59. C
60. D
61. C
62. C
63. A
64. C
65. B
66. C
67. D
68. A
69. D
70. B
71. D
72. B
73. C
74. D
75. A
76. D
77. B
78. C
79. D
80. A
81. B
82. C
83. D
84. D
85. D
86. C
87. B
88. B
89. C
90. B

91. B
92. C
93. B
94. A
95. D
96. D
97. D
98. B
99. D
100. A
101. B
102. D
103. C
104. B
105. B
106. C
107. B
108. A
109. C
110. A
111. C
112. D
113. D
114. C
115. A
116. C
117. D
118. D
119. A
120. B
121. A
122. A
123. C
124. A
125. D
126. C
127. C
128. B
129. C
130. D
131. D
132. A
133. C
134. B
135. A
136. B

137. D
138. A
139. D
140. C
141. A
142. C
143. C
144. C
145. B
146. D
147. C
148. B
149. B
150. C