1. Describe the four major developmental processes underlying the development of a fetus: cell division, cell migration, cell differentiation, and apoptosis. For each process, provide an explanation of what occurs during the process as well as an example of the process. Be sure to specify *when* during the development of the fetus each process comes into play.

2. Describe a day in the life of an 8-month-old fetus. Include a description of types of sensations seen, heard, tasted, smelled, and felt by the fetus.

3. A couple with a newborn cannot agree on how much their new baby knows about his new world. The baby's mother insists that he does not recognize anything and that he would not know the difference if he were suddenly transported to a different planet, complete with different sights, sounds, smells, and so forth. The baby's father, however, argues that the baby learned a lot while in the uterus and thus recognizes many features of his new world. Identify which parent is more accurate, and discuss at least four pieces of evidence to support that parent's view.

4. Describe the DeCasper and Spence *Cat in the Hat* study. What did they ask pregnant women to do, and why? What did they examine in the newborns of these women? What were their results, and what can be learned from these results?

5. Describe the differences and similarities of the effects of teratogens in the embryonic period and in the fetal period. Explain why these differences and similarities exist.

6. Provide examples of maternal and environmental factors that affect prenatal development.

7. Describe how birth is likely to be experienced by the fetus/newborn and explain the functions served by squeezing the fetus/newborn as it passes through the birth canal.

8. Describe the newborn's states of arousal.

9. Describe the multiple-risk model and how it applies to the association between poverty and birth outcomes. Be sure to give specific examples to support the description.

Answer Key

1. There are four major developmental processes that underlie the transformation of a zygote into an embryo and then to a fetus. The first is cell division. This is also known as mitosis. Through continuous cell division during the course of pregnancy, the zygote transforms into a newborn. The second process, called cell migration, occurs during the embryonic period. This is where cells move away from their original location. Neurons that originate inside the embryonic brain travel to the outer regions of the developing brain. The third process is called cell differentiation. Initially, all embryonic cells are interchangeable and equivalent and are referred to as stem cells. The cells then start to specialize in terms of function and structure. One key determinant is when cells are turned on or expressed. Another is the cells location. The fourth developmental process is cell death. The selective death of certain cells is genetically programmed and is called apoptosis. This is needed for certain features to fully develop, such as fingers. The webbing between the fingers needs to die off, so to speak, for the fingers to actually form.
2. While it is not completely dark inside the womb, what the 8-month-old fetus can see is limited. The fetus does experience touch or tactile stimulation as a result of its own activity. The fetus can also bump and push into the wall of the uterus. By 8 months, the fetus can also respond to maternal movements. This suggests that the fetus's vestibular systems are functioning prior to birth. The fetus can also taste the flavours that are contained in amniotic fluid and shows a preference for sweet flavours. The amniotic fluid also has an odour and often reflects the diet of the mother. The fetus is able to experience these smells. The fetus also hears sound and noise while in the womb. The prenatal environment includes maternal sounds related to the mother's digestive system, heartbeat, and so on. The fetus can also hear the mother speaking. By 8 months the fetus can also detect noises outside the mother's body, and more external sounds.
3. Research has demonstrated that the fetus is able to learn from its prenatal experiences during the last trimester of pregnancy, after the central nervous system has developed in order to support learning. Evidence of fetal learning comes from studies of habituation, which involves a decrease in response to repeated or continued stimulation. Fetuses as young as 30 weeks of gestation have shown habituation to visual and auditory stimuli. With this learning ability, fetuses learn the sound of their mothers' voice. They also remember the smell of the amniotic fluid that they were in. They also remember other sounds they heard prenatally.
4. DeCasper and Spence (1986) asked pregnant women to read aloud twice a day from *The Cat in the Hat* during the last six weeks of their pregnancy. The researchers wanted to know if the infant would recognize the story after birth. After birth, the researchers then tested the newborns. The infants were fitted with miniature headphones and given a special pacifier to suck on. When the infants sucked in one particular pattern, they heard the familiar story through the headphones, but when they sucked in a different pattern, they heard an unfamiliar story. The babies quickly increased their sucking in the pattern that enabled them to hear the story. Based on these results, it is obvious that fetuses are listening to their environment and learning from their experiences.
5. A teratogen is an external agent that can cause damage or death during prenatal development. The effects of teratogen exposure during prenatal development can vary

based on the timing of exposure. For instance, exposure during the embryonic period may result in major structural abnormalities while exposure during the fetal period may result in physiological defects and minor structure abnormalities. Also, many teratogens cause damage only if they are present during a sensitive period in prenatal development. The major organ systems are most vulnerable to damage at the time when their basic structures are being formed.

6. Environmental factors that can be detrimental to prenatal development include exposure to lead, which can lead to reduced intelligence and the development of attention-deficit/hyperactivity disorder symptoms. It is also related to miscarriage, preterm birth, and low birth rate. Maternal factors that can impede prenatal development include age, nutrition, health, and stress. For instance, infants born to mothers younger than 15 years of age are more likely to die before their first birthday, while infants born to mothers who are in their late thirties or forties have an increased risk of developing fetal chromosomal abnormalities and birth complications.
7. It is unlikely that the birth experience is painful to the fetus/newborn. The baby experiences squeezing as it moves through the birth canal, which is not likely to be painful. Additionally, this squeezing serves important functions. It temporarily reduces the overall size of the fetus's large head, allowing it to pass safely through the mother's pelvic bones. This is possible because the skull is composed of separate plates that can overlap one another slightly during birth. The squeezing also stimulates the production of hormones that help the fetus withstand mild oxygen deprivation during birth and to regulate breathing after birth. The squeezing of the fetus's body also forces amniotic fluid out of the lungs, in preparation for the newborn's first, crucial gasp of air.
8. State refers to a continuum of arousal, ranging from deep sleep to intense activity. During a 24-hour period newborns experience a total of six states, ranging from quiet sleep to crying. Within this general pattern, however, there is a great deal of individual variation. Some infants cry relatively rarely, whereas others cry for hours every day; some babies sleep much more, and others much less, than the 16-hour average. Some infants spend more than the average of 2 1/2 hours in the awake-alert state, in which they are fairly inactive but attentive to the environment.
9. The multiple-risk model highlights that risk factors tend to occur together. For example, a woman who is so addicted to alcohol, cocaine, or heroin that she continues to abuse the substance even though she is pregnant is likely to be under a great deal of stress and unlikely to eat well, take vitamins, earn a good income, seek prenatal care, have a strong social support network, or take good care of herself in other ways. Furthermore, whatever the cumulative effects of these prenatal risk factors, they will likely be compounded after birth by the mother's continuation of her unhealthy lifestyle and by her resulting inability to provide good care for her child. A negative developmental outcome is more likely when there are multiple risk factors.

1. The Beng people of West Africa believe that life begins:
   A) at conception, as an angel is believed to enter the fertilized egg.
   B) during the third trimester, as this is the time at which independent thoughts are believed to begin.
   C) at birth, as the newborn is introduced to the sun at this time.
   D) when the umbilical stump drops off, as this is when the newborn is believed to emerge from the spirit village and become a person.

2. Which activity is consistent with the beliefs of the Beng people of West Africa about when life begins?
   A) elabourately painting newborns' faces
   B) protecting the umbilical stump from drying out and falling off
   C) allowing newborns to cry for several minutes before tending to them
   D) All of these activities are consistent with those beliefs.

3. Aristotle supported the idea of epigenesis, the notion that:
   A) prenatal development begins with a new miniature individual already preformed.
   B) new structures and functions emerge throughout prenatal development.
   C) prenatal development begins in the centre of the body of the new individual.
   D) woman was created out of the rib of a man.

4. Which concept is consistent with Aristotle's beliefs about prenatal development?
   A) The effects of thalidomide on prenatal development vary depending on when during the pregnancy the mother took the drug.
   B) Infants born prematurely already have all the correct structures but in miniature.
   C) Female eggs contain minuscule preformed human beings.
   D) None of these concepts is consistent with Aristotle's beliefs.

5. If sexual intercourse takes place near the time the egg is released, _____ is possible.
   A) conception
   B) implantation
   C) fertilization
   D) meiosis

6. How many sperm are ejaculated during sexual intercourse?
   A) 200 million
   B) 500 million
   C) 200
   D) 500

7. Sperm and eggs are referred to as:
   A) gametes.
   B) embryos.
   C) zygotes.
   D) genetic cells.

8. Germ cells contain _____ chromosome pairs.
   A) 13
   B) 23
   C) 49
   D) 92

9. Gametes form through the process of:
   A) mitosis.
   B) conception.
   C) meiosis.
   D) germinalization.

10. Conception is:
    A) the union of egg and sperm.
    B) sexual intercourse.
    C) meiosis.
    D) the embedding of the fertilized egg into the uterine wall.

11. Once sperm have entered the vagina, how many typically get close to the egg?
    A) one or two
    B) approximately 200
    C) hundreds of thousands
    D) millions

12. Which statement about the “survival of the fittest” principle and conception is TRUE?
    A) This principle applies only to the process of egg release from the fallopian tube, not to the other processes involved in conception.
    B) The eggs that manage to reach the sperm are likely to be healthy, as eggs with serious defects tend to be unable to reach the sperm.
    C) The sperm that manage to reach the egg are likely to be healthy, as sperm with serious defects tend to be unable to reach the egg.
    D) This principle does not come into play until a child is born.

13. Which statement(s) about the number of males and females is/are TRUE?
    Statement A: Sperm containing a Y chromosome swim faster than those containing an X chromosome.
    Statement B: Male fetuses are more vulnerable to miscarriage than are female fetuses.
    Statement C: Cultural values and governmental policy contribute to the differences in the number of male and female babies born and raised in some societies.
    A) Statements A and C only
    B) Statement C only
    C) Statements A and B only
    D) Statements B and C only

14. Which item would likely be MOST interesting to a scientist interested in embryos?
    A) an X-ray of the internal organs of a 2-year-old child
    B) the ultrasound images of an unborn fetus at 4 weeks following conception
    C) a blood test of a pregnant woman
    D) a picture of all of the members of a family

15. A fertilized egg is termed a(n):
    A) embryo.
    B) zygote.
    C) fetus.
    D) gamete.

16. Which sequence CORRECTLY lists the periods of prenatal development in the correct developmental progression?
    A) zygotic, embryonic, germinal
    B) zygotic, germinal, fetal
    C) germinal, embryonic, fetal
    D) embryonic, germinal, fetal

17. Which sequence lists the periods of prenatal development in the CORRECT developmental progression from earliest to latest?
    A) embryo, fetus, zygote
    B) zygote, fetus, embryo
    C) fetus, zygote, embryo
    D) zygote, embryo, fetus

18. Which developmental process occurs EARLIEST?
    A) cell migration
    B) apoptosis
    C) cell division
    D) cell differentiation

19. Cell division in the embryonic period is referred to as:
    A) meiosis.
    B) apoptosis.
    C) neurosis.
    D) mitosis.

20. Which occurrence is an example of mitosis?
    A) splitting of the fertilized egg into two equal parts
    B) death of cells in between the ridges on the hand plate
    C) movement of new cells into the outer layer of the brain
    D) specialization of eye cells

21. Cell migration occurs during which period?
    A) apoptosis
    B) fetal
    C) germinal
    D) embryonic

22. Embryonic cells are also known as:
    A) stem cells.
    B) divided cells.
    C) fertilized eggs.
    D) zygotic cells.

23. Stem cells:
    A) have varying genetic makeups.
    B) contain half the genetic material of the individual.
    C) do not have a fixed function.
    D) have stable genetic makeups.

24. Cell differentiation refers to the _____ of cells.
    A) relocation
    B) specialization
    C) migration
    D) death

25. Researchers working on regenerative medicine are interested in early embryonic stem cells because of their:
    A) developmental flexibility.
    B) genetic makeup.
    C) size.
    D) specialized function.

26. Which process is an example of cell differentiation?
    A) splitting of the fertilized egg into two equal parts
    B) death of cells in between the ridges on the hand plate
    C) movement of new cells into the outer layer of the brain
    D) specialization of eye cells

27. Regarding the flexibility of a cell's function during the embryonic and fetal periods, cells are:
    A) initially flexible and then become inflexible.
    B) initially inflexible and then become more flexible.
    C) flexible throughout the embryonic and fetal periods.
    D) inflexible throughout the embryonic and fetal periods.

28. The study in which cells located in the eye region of a frog embryo were moved to its belly demonstrated which property of cell functions?
    A) The location of a given cell before migration determines its function.
    B) The location of a given cell after migration determines its function.
    C) The genetic makeup of a given cell before migration determines its function.
    D) The genetic makeup of a given cell after migration determines its function.

29. A mad scientist wishes to create a nonhuman animal with a tongue on its back. Presuming that the scientist believes in phylogenetic continuity, when would the scientist be MOST likely to perform the cell transplant?
    A) early in the fetal period
    B) late in the germinal period
    C) early in the embryonic period
    D) early in the germinal period

30. The idea that humans share some developmental processes with other animals because of their shared evolutionary history is referred to as:
    A) FASD.
    B) developmental resilience.
    C) fetal programming.
    D) phylogenetic continuity.

31. A belief in phylogenic continuity is necessary for developmentalists to:
    A) understand that prenatal experiences can affect adult development.
    B) predict rates of infant mortality.
    C) test hypotheses about human development on chimpanzees.
    D) comprehend how stem cells function.

32. Phylogenetic continuity refers to the:
    A) expectation that some cells have a programmed suicide and thus selectively disappear.
    B) notion that stem cells may be the key to curing diseases such as Parkinson's and Alzheimer's.
    C) idea that humans share some characteristics and developmental processes with other animals.
    D) relation between a cell's function before and after migration.

33. The fact that researchers interested in human developmental processes often examine rats is an indication that they believe in:
    A) stem cell flexibility.
    B) the ethical treatment of animals.
    C) apoptosis.
    D) phylogenetic continuity.

34. Research demonstrating that it is the scent of amniotic fluid that guides a newborn rat to its mother's nipple is evidence of:
    A) the similarity of rats and humans in their taste preferences.
    B) fetal learning.
    C) phylogenetic continuity.
    D) rats' poor maternal instincts.

35. Apoptosis refers to:
    A) programmed cell death.
    B) cell reproduction.
    C) cell migration.
    D) cell division.

36. Which statement about apoptosis is TRUE?
    A) Apoptosis is a necessary part of development.
    B) Apoptosis signals there might be a problem with prenatal development.
    C) Apoptosis explains why stem cells are sought after by researchers.
    D) Apoptosis is also called cell migration.

37. Which event is thought to be apoptosis?
    A) splitting of the fertilized egg into two equal parts
    B) loss of cells in between the ridges on the hand plate
    C) movement of new cells into the outer layer of the brain
    D) specialization of eye cells

38. The presence of _____ determines whether a fetus develops female or male sex organs.
    A) testosterone produced by the mother
    B) progesterone produced by the mother
    C) androgens produced by the fetus
    D) progesterone produced by the fetus

39. Which statement about the development of sex organs is TRUE?
    A) If the mother produces testosterone, then the fetus will develop male organs; if the mother produces estrogen, then the fetus will develop female sex organs.
    B) If the fetus produces testosterone, then it will develop male organs; if the fetus produces estrogen, then it will develop female sex organs.
    C) If the fetus produces high levels of testosterone, then it will develop male organs; if the fetus produces moderate levels of testosterone, then it will develop female sex organs.
    D) If the fetus produces androgens, then it will develop male organs; if the fetus produces no androgens, then it will develop female sex organs.

40. Which item is an example of the active participation of the fetus in its own development?
    A) fetal alcohol syndrome
    B) hormonal influence on development of sex organs
    C) placental defense against toxins and infections
    D) cephalocaudal development

41. John and James are fraternal twins. Which statement explains how fraternal twins form?
    A) Fraternal twins develop from one fertilized egg that divides into three different cell masses at the moment of conception.
    B) Fraternal twins result when two different eggs are released from the ovary into the fallopian tube and both are fertilized.
    C) Fraternal twins are formed when two different sperm enter the same egg.
    D) Fraternal and maternal twins are formed exactly the same way.

42. Stacey and Macey are identical twins. What does this mean in terms of their genetic makeup?
    A) The DNA from their mother is the same, but their DNA differs in terms of what they received from their father.
    B) The DNA from their father is the same, but their DNA differs in terms of what they received from their mother.
    C) They have inherited different DNA from both of their parents.
    D) They have exactly the same DNA.

43. A transparent, fluid-filled membrane that surrounds and protects the fetus is called the:
    A) neural tube.
    B) amniotic fluid.
    C) amniotic sac.
    D) placenta.

44. This hormone increases the flow of maternal blood to the uterus.
    A) estrogen
    B) progesterone
    C) testosterone
    D) apoptosis

45. Identical twins most often originate when:
    A) two eggs are fertilized by two sperm.
    B) an egg splits and is fertilized by two sperm.
    C) an inner cell mass splits in half.
    D) an embryo splits in half.

46. Which statement about the levels of genetic similarity of identical twins, same-sex fraternal twins, and other same-sex sibling pairs is TRUE?
    A) Same-sex fraternal twins and other same-sex sibling pairs have an equal level of genetic similarity, and they are both less genetically similar than are identical twins.
    B) Same-sex fraternal and identical twins have an equal level of genetic similarity, and they are both more genetically similar than are other same-sex sibling pairs.
    C) Same-sex fraternal twins are less genetically similar than are identical twins and more genetically similar than are other same-sex sibling pairs.
    D) Identical twins, same-sex fraternal twins, and other same-sex sibling pairs all have equal levels of genetic similarity.

47. After the implantation of the zygote, as the ball of cells begins to differentiate, the inner cell mass becomes the:
    A) fetus.
    B) gamete.
    C) embryo.
    D) support system.

48. The three layers of the inner cell mass develop into:
    A) different parts of the body of the fetus.
    B) the fetus, the zygote, and the embryo.
    C) the embryo, the placenta, and the umbilical cord.
    D) different parts of the neural tube.

49. The neural tube develops into the:
    A) internal organs.
    B) brain and spinal cord.
    C) digestive system.
    D) inner layers of skin.

50. Which organ contains the blood vessels running between the embryo and the placenta?
    A) the umbilical cord
    B) the amniotic sac
    C) the neural tube
    D) the amniotic fluid

51. Which organ acts as a defensive barrier against toxins and infections?
    A) the umbilical cord
    B) the amniotic sac
    C) the placenta
    D) the amniotic fluid

52. Which activity is NOT a function of the placenta?
    A) allowing for the transport of nutrients to the fetus
    B) allowing for the removal waste products from the fetus
    C) cushioning the fetus
    D) providing a barrier to infection

53. Which adjective describes a characteristic of the placenta?
    A) transparent
    B) watery
    C) watertight
    D) semipermeable

54. The placental membrane allows _____ to pass through it.
    A) oxygen, carbon dioxide, blood, and some antibodies
    B) blood, urea, minerals, and nutrients
    C) all antibodies, nutrients, urea, and oxygen
    D) carbon dioxide, nutrients, minerals, and some antibodies

55. The _____ protects the fetus from bumps and jolts.
    A) umbilical cord
    B) amniotic fluid
    C) neural tube
    D) placenta

56. The nose and the mouth are almost fully formed during the _____ week of prenatal development.
    A) 4th
    B) 6th
    C) 8th
    D) 10th

57. The heart has achieved its basic adult structure by the _____ week of prenatal development.
    A) 4th
    B) 6th
    C) 8th
    D) 11th

58. By the _____ week of prenatal development, the external genitalia are developed.
    A) 4th
    B) 6th
    C) 8th
    D) 16th

59. Which statement about the rate of prenatal development is TRUE?
    A) Earlier development takes place at a more rapid pace than later development.
    B) Later development takes place at a more rapid pace than earlier development.
    C) The pace of development remains relatively continuous.
    D) Development begins slowly, speeds up, and then slows down again.

60. Cephalocaudal development refers to the tendency for development to take place from _____ to _____.
    A) head; body
    B) body; head
    C) inside; outside
    D) outside; inside

61. In general, prenatal development occurs in such a manner that areas close to the _____ develop earlier than do areas farther away from it.
    A) spinal cord
    B) heart
    C) head
    D) large intestine

62. Which statement about prenatal development of the heart is TRUE?
    A) By 6 weeks, the heart has developed into its basic adult structure.
    B) At 12 weeks, the heart begins to beat and circulate blood.
    C) By 4 weeks, the heart is beating and circulating blood.
    D) At 16 weeks, the heart develops into its basic adult structure.

63. The brain and lungs are well enough developed by the _____ week that the fetus has a chance of surviving on its own without medical intervention.
    A) 14th
    B) 28th
    C) 34th
    D) 37th

64. By the _____ week of prenatal development, most of the movements that will be present at birth have appeared.
    A) 4th
    B) 6th
    C) 12th
    D) 16th

65. Approximately how long after conception does the fetus begin to make movements?
    A) 3 hours
    B) 5 weeks
    C) 12 weeks
    D) 5 months

66. For which fetal behaviour is there no clear explanation?
    A) breathing movements
    B) hiccups
    C) swallowing
    D) moving arms and legs

67. Gina and Margaret are pregnant at the same time. Gina's fetus is quite active throughout the day, whereas Margaret's fetus is rather inactive. Which explanation would be the BEST guess as to how active their infants will be?
    A) Gina's infant is likely to be more active than is Margaret's infant.
    B) Margaret's infant is likely to be more active than is Gina's infant.
    C) Gina's infant and Margaret's infant will probably be similar in activity level, as all infants have similar levels of activity.
    D) There is no way to predict postnatal activity level from prenatal activity level, so no guess can be made about the infants' activity levels.

68. Which activity is NOT generally performed by fetuses?
    A) sucking
    B) moving chest wall in and out
    C) scratching itches
    D) swallowing

69. The fetal behaviour of swallowing is thought to:
    A) continually clean the internal organs as they develop.
    B) promote the normal development of the palate.
    C) be somewhat harmful to the development of the intestines.
    D) be one of the earliest prenatal movements.

70. Which fetus is likely to be the MOST active?
    A) a 7-week-old
    B) a 12-week-old
    C) a 25-week-old
    D) a 32-week-old

71. In regard to fetal activity and inactivity, fetuses:
    A) do not have true sleep states, but they do have periods of inactivity while awake.
    B) have periods of high activity and rest while awake, and they have both active and quiet sleep states.
    C) are essentially asleep most of the day and night, but their sleep can be active or quiet.
    D) are in constant motion throughout the day and night.

72. Which sense is LEAST stimulated in the uterus?
    A) taste
    B) sight
    C) hearing
    D) smell

73. The fetus experiences tactile stimulation in the womb as a result of:
    A) the mother's digestive system.
    B) the mother touching her abdomen.
    C) other people interacting with the mother.
    D) the fetus's own activity.

74. In terms of the fetus's taste experiences and preferences, the fetus:
    A) does not drink or eat through its mouth, and thus it has no taste experiences or preferences.
    B) ingests amniotic fluid, but the fluid has a constant flavour, and thus the fetus has no taste preferences.
    C) ingests amniotic fluid, but it cannot distinguish among different flavours in the fluid and thus has no taste preferences.
    D) ingests amniotic fluid, can distinguish among different flavours in the fluid, and prefers sweet flavours.

75. Scientific evidence has demonstrated that:
    A) when saccharin was injected into amniotic fluid, the mothers' urine showed that the fetuses ingested more amniotic fluid when it had been sweetened.
    B) when offered chocolate milk versus orange juice, preterm infants drank more chocolate milk.
    C) fetuses smiled more when fed a sugar solution than when fed a saline solution.
    D) the idea that fetuses prefer sweet flavours is merely an assumption that was made based on research conducted with newborns.

76. Regarding taste and smell, amniotic fluid:
    A) has a constant taste and smell.
    B) can take on a variety of flavours but has a constant smell.
    C) has a constant taste but can take on a variety of odours.
    D) can take on a variety of flavours and odours.

77. Which sound(s) does the fetus hear?
    A) intonation and pattern of the mother's speech
    B) voices of people talking to the mother
    C) blood pumping through the mother's vascular system
    D) maternal sounds, such as her heartbeat, breathing, and digestion

78. A fetus's decreased response to a repeated stimulus is termed:
    A) sensitization.
    B) desensitization.
    C) habituation.
    D) dishabituation.

79. An 8-month-old fetus who hears a phone ring repeatedly over the course of several minutes probably experiences:
    A) initial changes in heart rate, with decreased changes as the ringing continues.
    B) initial changes in heart rate, with increased changes as the ringing continues.
    C) no changes in heart rate initially but increased changes as the ringing continues.
    D) no changes in heart rate throughout the ringing.

80. Habituation indicates that a fetus _____ a stimulus.
    A) likes
    B) dislikes
    C) has learned to recognize
    D) has failed to perceive

81. Habituation involves a(n) _____ heart rate response.
    A) increased
    B) decreased
    C) unpredictable
    D) variable

82. The EARLIEST time at which fetal habituation has been observed is _____ weeks.
    A) 16
    B) 25
    C) 30
    D) 37

83. At the end of her pregnancy, Joshua's mother's diet included a lot of ginger. It is MOST likely that newborn Joshua will:
    A) have no memory of the smell or taste of ginger because maternal diet does not affect prenatal experience.
    B) have no memory of the smell or taste of ginger because fetal memory is very short lived.
    C) remember the smell and taste of ginger, but this memory will last only a week or two.
    D) remember the smell and taste of ginger well into his first year.

84. Infant preferences based on prenatal experience have been demonstrated for:
    A) sounds.
    B) flavours.
    C) smells.
    D) taste.

85. The study by DeCasper and Spence in which pregnant women read to their fetuses from *The Cat in the Hat* demonstrated that newborn infants were _____ to recognize the story they had heard while in the uterus, and/but _____ prefer it over other stories.
    A) able; did
    B) able; did not
    C) unable; did
    D) unable; did not

86. Newborns prefer to listen to:
    A) another woman's voice over their mothers' voice.
    B) their mothers' language over another language.
    C) novel stories rather than familiar stories.
    D) Newborns show no auditory preferences.

87. Which sound is a newborn MOST likely to prefer?
    A) its mother's voice
    B) its mother's voice, muffled
    C) its mother's voice, at a faster rate of speech
    D) its father's voice

88. What advice should be given to expectant parents who are interested in educating their child in a foreign language and classical literature before birth?
    A) Fetuses have no ability to learn anything while in the womb, and thus any talking, singing, or reading you do will not be remembered by the fetus after it is born.
    B) Although your child may come to recognize and even prefer the patterns of the language and literature he or she is exposed to while in the womb, babies are unable to hear specific words or learn any kind of factual knowledge while in the womb.
    C) You will give your child a sufficient head start if you pipe foreign language and classical literature recordings into the womb.
    D) If you want your child to become fluent in a foreign language and appreciate literature, you must start before the child is born.

89. About two-thirds of miscarriages occur:
    A) prior to implantation.
    B) immediately following fertilization.
    C) before the baby is clinically detectable.
    D) within the first 6 months of gestation.

90. Roughly _____% of couples experience recurrent miscarriages.
    A) 1
    B) 5
    C) 7
    D) 9

91. A study of Chinese women found that approximately one-_____ of fetuses did NOT survive to birth.
    A) twentieth
    B) tenth
    C) quarter
    D) third

92. In North America, what percentage of clinically recognized pregnancies end in miscarriage?
    A) between 2% and 5%
    B) between 6% and 15%
    C) between 20% and 25%
    D) between 30% and 35%

93. The MOST likely threat to prenatal development is:
    A) illegal drugs.
    B) miscarriage.
    C) alcohol.
    D) herpes.

94. The discovery of Minamata disease demonstrated the:
    A) greater vulnerability of males than of females.
    B) effects of cultural differences in birthing practices.
    C) protective value of the placenta.
    D) detrimental impact environmental factors can have on prenatal development.

95. Environmental agents that have the potential to cause harm during prenatal development are referred to as:
    A) illegal drugs.
    B) dermatogens.
    C) teratogens.
    D) pollutants.

96. Which influence is NOT considered a teratogen?
    A) poor nutrition
    B) illegal drugs
    C) environmental pollutants
    D) cigarette smoke

97. Which statement about sensitive periods in prenatal development is TRUE?
    A) All major organ systems share the same sensitive period.
    B) Teratogens have the most serious effect on prenatal development immediately before a system's sensitive period.
    C) A sensitive period is the time when a system's basic structures are being formed.
    D) The sensitive period of limb development occurs several weeks before the limbs begin to form.

98. Roughly _____% of women experience postpartum depression.
    A) 5
    B) 10
    C) 15
    D) 20

99. While it is not certain if maternal use of SSRIs leads to negative fetal outcomes, SSRIs have at least NOT been associated with:
    A) cardiac malformation.
    B) autism spectrum disorder.
    C) schizophrenia.
    D) preterm birth.

100. Which effect is NOT a result of neonatal abstinence syndrome?
    A) low birth weight
    B) breathing problems
    C) feeding difficulties
    D) cardiac malformations

101. Which statement about the timing of effects of teratogens is FALSE?
    A) The sensitive period for the development of the external genitalia occurs prior to the sensitive period for the heart.
    B) The sensitive periods for the central nervous system and the heart are the same.
    C) Exposure to teratogens during the fetal period is likely to lead to major structural defects.
    D) There is no sensitive period in relation to the timing of effects of teratogens.

102. Which description CORRECTLY identifies the effect of thalidomide on developing fetuses?
    A) safe for fetuses of all ages
    B) unsafe for fetuses of all ages
    C) harmful to fetuses between the 4th and 6th weeks after conception but safe at other times
    D) safe for fetuses between the 4th and 6th weeks after conception but harmful at other times

103. The effects of thalidomide BEST demonstrate:
    A) sensitive periods of development.
    B) cumulative effect.
    C) dose–response relation.
    D) sleeper effect.

104. For teratogens that show a dose–response relation:
    A) any level of exposure to the teratogen causes an equivalent likelihood of a defect.
    B) the greater the exposure to the teratogen, the greater the likelihood of a defect.
    C) the greater the exposure to the teratogen, the lesser the likelihood of a defect.
    D) detrimental effects are seen only at very high exposure levels.

105. The likelihood of a prenatal defect and the severity of the defect from exposure to teratogens are generally dependent on:
    A) amount of exposure.
    B) genetic susceptibility.
    C) levels of exposure to other teratogenic agents.
    D) sensitive period.

106. The term *fetal programming* meAns:
    A) individual differences in teratogenic effects that occur as a result of genetic differences.
    B) prenatal learning of sounds, tastes, and smells.
    C) genetic differences in ability to learn prenatally.
    D) the later emergence of effects of the prenatal period.

107. The teratogenic effect of which substance can BEST be characterized as a sleeper effect?
    A) DES
    B) thalidomide
    C) cigarette smoke
    D) alcohol

108. Which statement about the effects of cigarette smoke on a fetus is TRUE?
    A) Exposure to secondhand smoke is unlikely affect the fetus.
    B) The fetus gets less oxygen when its mother smokes.
    C) The amniotic sac prevents the fetus from being exposed to cancer-causing agents in tobacco.
    D) None of these statements is true.

109. Smoking by pregnant women does NOT contribute to _____ in the unborn child.
    A) decreased IQ
    B) increased risk of SIDS
    C) increased risk of FASD
    D) slowed fetal growth

110. In Canada, which substance is the MOST common cause of injury to the fetal brain?
    A) alcohol
    B) illegal drugs
    C) toxoplasma
    D) cigarette smoke

111. Which maternal factor likely does NOT lead to premature birth or low birth weight?
    A) cocaine use
    B) malnutrition
    C) cigarette smoking
    D) healthy nutrition

112. Infants whose mothers are _____ are 3 to 4 times more likely to die before their first birthday than those whose mothers are between the ages of _____.
    A) 30 years or older; 20 and 29
    B) 15 years or younger; 23 and 29
    C) 35 years or older; 15 years or younger
    D) 20 years or younger; 30 years or older

113. Brenda is 35 years old and pregnant with her first child. She is NOT at greater risk for:
    A) fetal chromosomal abnormalities.
    B) birth complications.
    C) autism spectrum disorder.
    D) fetal death.

114. Which activity is NOT thought to be a contributor to sudden infant death syndrome (SIDS)?
    A) smoking near an infant
    B) putting baby to sleep on its tummy
    C) dressing baby too warmly during sleep
    D) putting baby to sleep on its back

115. Which statement is good advice for a new parent concerned about SIDS?
    A) Allow smokers to smoke in the house but not in the baby's room.
    B) Put the baby to sleep on her back.
    C) Make sure the baby sleeps with a pillow.
    D) Put the baby to sleep with warm clothes and a warm blanket.

116. Which statement about fetal exposure to alcohol is NOT true?
    A) Alcohol in the mother's blood crosses the placenta into the fetus's bloodstream.
    B) The fetus smells alcohol through the amniotic sac.
    C) The fetus drinks alcohol-laden amniotic fluid.
    D) The fetus's poor ability to metabolize alcohol causes it to remain in the fetus's system for an extended period.

117. Forms of fetal alcohol spectrum disorder include:
    A) fetal alcohol syndrome.
    B) fetal alcohol effects.
    C) both fetal alcohol disease and fetal alcohol syndrome.
    D) both fetal alcohol syndrome and fetal alcohol effects.

118. Which condition is NOT a feature of fetal alcohol syndrome?
    A) increased risk of SIDS
    B) mental retardation
    C) facial deformities
    D) hyperactivity

119. Severe emotional stress and alcoholic consumption during pregnancy have which effect in common?
    A) SIDS
    B) hyperactivity
    C) mental retardation
    D) small head size

120. Which pattern of maternal alcohol consumption is considered acceptable in terms of avoiding harmful effects?
    A) drinking several drinks over a quick period of time, only a few times during pregnancy
    B) drinking one and only one drink per day
    C) drinking large amounts of alcohol on a frequent basis
    D) there is no acceptable level of maternal alcohol consumption

121. Marijuana use by a pregnant woman likely affects the fetus's:
    A) learning and memory after birth.
    B) facial development.
    C) head size.
    D) neural tube development.

122. Mothers whose diet was high in Arctic fish had babies with an increased likelihood of:
    A) Minamata disease.
    B) hearing loss.
    C) attention difficulties.
    D) limb deformity.

123. Which statement about environmental pollutants is TRUE?
    A) There is no evidence that environmental pollutants can impair prenatal development.
    B) Only pollutants that are ingested can impair prenatal development.
    C) Only pollutants that pass through the respiratory system can impair prenatal development.
    D) Environmental pollutants can have significant and sometimes disastrous consequences on fetal and child development.

124. Which maternal factor does NOT tend to have a negative impact on the health of the fetus?
    A) low socioeconomic status
    B) malnutrition
    C) genital herpes
    D) immature eggs

125. It is difficult to isolate the effects of malnutrition on prenatal development because malnutrition often coincides with:
    A) poverty.
    B) older mothers.
    C) rubella.
    D) mercury consumption.

126. The study of children born in the Netherlands during World War II demonstrated which finding about prenatal malnutrition?
    A) It is difficult to separate the effects of malnutrition from the other effects of poverty.
    B) The effects of malnutrition were most severe when the malnutrition began late in the pregnancy.
    C) The effects of malnutrition can be eliminated if the baby has adequate nutrition starting at birth.
    D) Fetal programming related to metabolism impacted later health and weight in adulthood.

127. Which maternal disease during pregnancy is LEAST likely to have a direct negative effect on the health of the baby?
    A) HIV
    B) genital herpes
    C) rubella
    D) cytomegalovirus

128. Recent research has demonstrated a link between the development of schizophrenia and maternal contraction of which disease in the first trimester?
    A) cytomegalovirus
    B) rubella
    C) genital herpes
    D) influenza

129. The mother's emotional state during pregnancy is associated with:
    A) fetal and newborn depression.
    B) decreased fetal physical activity during gestation and later obesity.
    C) decreased amniotic fluid and later depression.
    D) increased physical activity during gestation.

130. Medications given during labour to reduce the pain of labour can cause:
    A) decreased time of labour.
    B) increased pain experienced by the fetus.
    C) prolonged labour and increased use of instruments during vaginal births.
    D) decreased size of the “soft spot” on the baby's head.

131. Which statement about the fetal birth experience is TRUE?
    A) The pain experienced by the fetus during birth is comparable to the pain experienced by its mother.
    B) The compression of the skull in the birth canal can cause a premature disappearance of the fontanel.
    C) The forcing of amniotic fluid from the fetus's body as it is compressed in the birth canal promotes the newborn's first breath.
    D) All of these statements are true.

132. The small sacs of the newborn's lungs are forced open by the:
    A) squeezing of the fetus's body as it moves through the birth canal.
    B) birth cry after the fetus exits the birth canal.
    C) squeezing of the fetus's head as it passes through the mother's pelvic bones.
    D) vigorous rubbing of the newborn's body by the medical staff immediately following birth.

133. How do childbirth practices in Bali differ from those in Canada?
    A) Canadians place less emphasis on the immediate social integration of the newborn than do the Balinese.
    B) The Balinese tend to have a greater level of medical intervention than do Canadians.
    C) Balinese women know little about childbirth prior to their own experience of it, in comparison with Canadian women, who tend to be well informed.
    D) Canadians tend to have more friends and relatives at the birth than do the Balinese.

134. Shelby is expecting her first child. She is nervous about the birth and delivery. What is the likelihood that she will have a surgical delivery by cesarean?
    A) 15%
    B) 20%
    C) 27%
    D) 45%

135. Which factor is NOT a reason for the high number of surgical deliveries in Canada?
    A) multiple births
    B) convenience scheduling
    C) maternal obesity
    D) paternal request

136. One study found that, among mothers who had a C-section, almost _____% did not appear to have any pregnancy complications.
    A) 10
    B) 25
    C) 50
    D) 60

137. Quiet sleep, active awake, alert awake, and drowsing are examples of:
    A) types of sleep.
    B) autostimulation.
    C) newborn states.
    D) none of these.

138. On average, Western newborns spend _____ hours sleeping and _____ hour(s) crying.
    A) 16; 1
    B) 12; 1
    C) 12; 2
    D) 16; 2

139. Which condition is a characteristic of REM sleep?
    A) deep sleep state
    B) regular breathing
    C) absence of eye movements
    D) irregular heart rate

140. In terms of REM versus non-REM sleep, newborns spend:
    A) a greater amount of time in REM sleep than in non-REM sleep.
    B) a greater amount of time in non-REM sleep than in REM sleep.
    C) equal amounts of time in REM sleep and in non-REM sleep.
    D) proportionately more time in non-REM sleep than do adults.

141. Regarding amounts of REM and non-REM sleep, newborns spend:
    A) proportionately more time in REM sleep than do adults.
    B) proportionately more time in non-REM sleep than do adults.
    C) proportionately the same time in REM and non-REM sleep as do adults, though they differ from adults on the total amount of sleep.
    D) approximately the same time in REM sleep as do adolescents.

142. As described in the text, some researchers believe the amount of time newborns spend in _____ sleep is beneficial for the development of the _____ system.
    A) REM; visual
    B) non-REM; visual
    C) REM; auditory
    D) non-REM; auditory

143. If the theory presented in the text about newborn sleep states is accurate, in which newborn would a decrease in REM sleep be MOST likely to be seen?
    A) Baby Emma, who is deprived of visual stimulation during the day
    B) Baby Elijah, who is provided with a high level of extra visual stimulation during the day
    C) Baby Sofia, who is deprived of auditory stimulation during the day
    D) Baby Manny, who is provided with a high level of extra auditory stimulation during the day

144. Which statement about newborn sleep is TRUE?
    A) Newborns continue to get visual stimulation through their closed eyelids.
    B) Newborns spend more time than adults do in non-REM sleep.
    C) Newborns may be able to learn while asleep.
    D) All of these statements are true.

145. In terms of newborns' ability to learn from auditory stimulation while asleep, research has shown that newborns:
    A) cannot learn from auditory stimulation while asleep.
    B) can learn from auditory stimulation while asleep because they spend proportionately more time in REM sleep than do adults.
    C) can learn from auditory stimulation while asleep because they spend proportionately more time in non-REM sleep than do adults.
    D) seem to be able to learn from auditory stimulation while asleep because their brains do not become disconnected from external stimulation to the extent that adult brains do.

146. The information in which statement would be considered evidence that infant crying and adult aversion to it have adaptive significance?
    A) Babies who cry more are more likely to be abandoned than are those who cry less.
    B) The peak time for crying is in the evening.
    C) Babies who are with their mothers throughout the day and night cry more frequently than do other babies.
    D) Babies who cry more are more likely to survive times of severe hardship, such as famine.

147. Which statement about infant crying is TRUE?
    A) Infant crying peaks at about 6 weeks of age.
    B) Infant crying tends to be worse in the morning.
    C) All newborn crying is a result of discomfort.
    D) None of these statements is true.

148. Cousins Chloe and Emma have not seen each other since they were children. Each woman now has a 4-week-old infant, and the two women and their babies are reunited at a family gathering. The two babies are napping in the same room when Chloe's baby bangs her leg on the crib and begins to cry. In this situation, it is MOST likely that Chloe and Emma will both:
    A) think that the crying baby is their own and be unable to identify whether the baby is hungry or in pain.
    B) know that the crying baby is Chloe's and be unable to identify whether the baby is hungry or in pain.
    C) think that the crying baby is their own, but Chloe will know that the baby is in pain.
    D) know that the crying baby is Chloe's, and Chloe will know that the baby is in pain.

149. Swaddling is considered a(n):
    A) form of child abuse.
    B) effective method of soothing a crying baby.
    C) productive way to encourage a newborn's first breath.
    D) type of colic.

150. Common soothing techniques, including rocking, swaddling, and singing, are all effective because they all involve:
    A) moderately intense stimulation.
    B) lengthy time investments on the part of caregivers.
    C) trying to figure out why the baby is crying.
    D) tactile stimulation.

151. Which action is LEAST likely to soothe a crying newborn?
    A) giving the infant a taste of sugar
    B) showing the infant a colourful picture
    C) patting the infant repetitively on the back
    D) swaddling the infant in a blanket

152. The text suggests that the BEST advice for parents regarding how quickly they should respond to their infants' cries is to respond:
    A) quickly to all the infant's cries, as immediate response will instill confidence in the infant.
    B) slowly to all the infant's cries so that the infant will learn to regulate her or his crying.
    C) quickly to severe distress, but less quickly to minor upset.
    D) quickly to minor upset, but less quickly to severe distress.

153. Laura and Mark are new parents whose baby cries for 3 to 4 hours a day for no apparent reason. Laura and Mark have had their baby examined by a pediatrician, who was unable to find any medical reason for the excessive crying. Laura and Mark's baby appears to be suffering from:
    A) cocaine withdrawal.
    B) neglect.
    C) colic.
    D) fetal alcohol syndrome.

154. Colic may be associated with issues with the newborn's _____ system.
    A) limbic
    B) nervous
    C) respiratory
    D) digestive

155. Which statement about infant mortality in Canada over the past several decades is TRUE?
    A) The Canadian infant-mortality rate has increased.
    B) The Canadian infant-mortality rate has remained stable.
    C) The Canadian infant-mortality ranking has gotten worse in comparison with other countries.
    D) The Canadian infant-mortality ranking has gotten better in comparison with other industrialized countries.

156. What is one possible reason for the higher rate of infant mortality in northern Canada than in the rest of the country?
    A) greater prevalence of macrosomic births in northern Canada
    B) higher rates of eating bison in northern Canada
    C) lack of universal healthcare in northern Canada
    D) lower average temperature in northern Canada

157. A baby born at 38 weeks after conception weighing 5 pounds is labelled:
    A) premature.
    B) small for gestational age.
    C) small for prenatal age.
    D) none of these.

158. Premature babies are those who are born at _____ weeks after conception or earlier.
    A) 25
    B) 30
    C) 37
    D) 38

159. Newborns considered to be premature are those born _____, whereas those considered to be small for gestational age are those born _____.
    A) at 35 weeks or earlier; weighing less than 5.5 pounds
    B) underweight; weighing less than 5.5 pounds
    C) at 35 weeks or earlier; weighing substantially less than normal for their age
    D) at 37 weeks or earlier; weighing substantially less than normal for their age

160. All low-birth-weight babies are:
    A) premature.
    B) small for gestational age.
    C) less than 3.5 pounds in weight at birth.
    D) less than 5.5 pounds in weight at birth.

161. A baby born weighing 5 pounds at birth is considered to be:
    A) premature and of low birth weight.
    B) of low birth weight and small for gestational age.
    C) premature and small for gestational age.
    D) of low birth weight.

162. Maya was born at 34 weeks and weighed 4.5 pounds. Remmy was born at 39 weeks and weighed 4.5 pounds. Of these two newborns, which is considered to be small for gestational age?
    A) Maya
    B) Remmy
    C) both Maya and Remmy
    D) neither Maya nor Remmy

163. Being _____ is NOT associated with an increased risk of being of low birth weight in Canada.
    A) exposed to teratogens
    B) a twin
    C) poor
    D) a first born

164. Which statement about the long-term outcomes for low-birth-weight babies in comparison to babies of normal weight is NOT true?
    A) Low-birth-weight babies are more likely to be hyperactive.
    B) Low-birth-weight babies are more likely to have trouble with peer relations.
    C) The majority of low-birth-weight babies end up similar to normal-weight babies in the long term.
    D) Low-birth-weight babies have a decreased level of medical complications, lower rates of neurosensory deficits, and reduced illness rates.

165. Zora and Jenny are twins. Zora is born weighing 4.5 pounds, and Jenny is born weighing 5.5 pounds. Which statement BEST characterizes Zora and Jenny's chances of completing high school, based on the research on low-birth-weight children?
    A) Zora and Jenny are equally likely to complete high school.
    B) Zora is more likely to complete high school than is Jenny.
    C) Jenny is more likely to complete high school than is Zora.
    D) The likelihood of Zora and Jenny completing high school cannot be predicted based on research on low-birth-weight children.

166. _____ can be used as an intervention for low-birth-weight infants.
    A) Physical contact
    B) Auditory stimulation
    C) Visual stimulation
    D) Olfactory stimulation

167. Tiffany Field and her colleagues demonstrated that low-birth-weight newborns can benefit from:
    A) massage.
    B) nutritional supplements.
    C) increased time in the isolette.
    D) good health care.

168. Preterm infants whose mothers participated in an intervention that included all of the following EXCEPT _____ showed fewer behaviour problems at age 5 years in comparison with mothers who did not receive the intervention.
    A) a focus on increasing parental self-confidence
    B) support sessions
    C) teaching of parents' responsiveness
    D) disciplinary techniques

169. Janelle is the parent of a low-birth-weight infant. It is MOST likely that her baby will:
    A) meet developmental milestones at predictable times.
    B) smile at her at approximately 6 weeks of age.
    C) have more trouble falling asleep and waking up than a typical baby.
    D) need excessive stimulation, which Janelle will have to work hard to provide.

170. Which statement about intervention programs aimed at helping low-birth-weight babies is TRUE?
    A) The success of the intervention is unrelated to the initial health status of the infant.
    B) The more risks the infant endures, the more successful the intervention will likely be.
    C) The positive results are especially clear for children who were relatively heavier at birth.
    D) Most intervention programs produce large gains.

171. Negative developmental outcomes are particularly likely when there are:
    A) genetic defects.
    B) multiple risk factors.
    C) psychiatric disorders.
    D) educational disadvantages.

172. The study by Michael Rutter demonstrated that the incidence of psychiatric problems among English children was particularly heightened when the family experienced _____ or more risk factors.
    A) two
    B) three
    C) four
    D) five

173. Babies born into poverty are more likely than are other babies to experience all of the following EXCEPT:
    A) low birth weight.
    B) SIDS.
    C) death in the first year of life.
    D) healthy nutrition.

174. A multiple-risk model of prenatal and later development applies MOST directly to the effects of:
    A) low IQ.
    B) poverty.
    C) disease.
    D) gender.

175. Which condition is NOT associated with poverty?
    A) poor nutrition
    B) drug abuse
    C) environmental hazards
    D) improved prenatal care

176. Individuals who do well, even when faced with multiple risks, illustrate the concept of:
    A) practical success.
    B) developmental resilience.
    C) pliability.
    D) persistent opposition.

177. Which factor is a reason why some children are resilient in the face of multiple developmental hazards?
    A) prenatal nutrition
    B) education
    C) responsive care
    D) welfare

178. The pair of factors that is common among resilient children is _____ and _____.
    A) responsive care; intelligence
    B) education; social welfare
    C) prenatal nutrition; education
    D) genetic advantages; responsiveness to others

Answer Key

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

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

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

137. C
138. D
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140. C
141. A
142. A
143. B
144. C
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146. D
147. A
148. D
149. B
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163. D
164. D
165. C
166. A
167. A
168. D
169. C
170. C
171. B
172. C
173. D
174. B
175. D
176. B
177. C
178. A