Unit 2 Practice Questions
1. Molecules of DNA are referred to as:
   A) cells.
   B) adenine.
   C) genes.
   D) chromosomes.

2. Every normal human body cell contains how many chromosomes?
   A) 23 pairs
   B) 23
   C) 46 pairs
   D) about 1,000

3. A genome is:
   A) the full set of genes for a particular organism.
   B) a molecule of DNA.
   C) the basic unit of heredity.
   D) the manufacturer of protein.

4. Each gene contains instructions for specific proteins. What does a protein contain?
   A) amino acids
   B) a chromosomal pattern
   C) a gene series
   D) at least one X chromosome

5. Saul and Joe are unrelated next-door neighbors. What percentage of the human genome do they share?
   A) 50%
   B) 80%
   C) 99.9%
   D) 100%

6. The sperm and the ovum are:
   A) chromosomes.
   B) gametes.
   C) eggs.
   D) zygotes.

7. Human development begins when a sperm penetrates the membrane of:
   A) an ovum.
   B) the ovary.
   C) the placenta.
   D) an amino acid.

8. When two human reproductive cells combine at the moment of conception, the result is a:
   A) fetus.
   B) pair of twins.
   C) zygote.
   D) gamete.
9. A sperm has ______ as many genes as a normal body cell.
   A) half
   B) four times
   C) twice
   D) just

10. A person's sex is determined by:
    A) nurture during prenatal development.
    B) the 23rd pair of chromosomes.
    C) the first pair of chromosomes.
    D) hormones released during prenatal development.

11. One difference between sperm cells and ova is that:
    A) ova carry an X chromosome, whereas sperm carry either an X or a Y chromosome.
    B) ova carry two X chromosomes, whereas sperm carry two Y chromosomes.
    C) sperm carry more genetic material than ova do.
    D) sperm carry two X chromosomes, whereas ova carry an X and a Y chromosome.

12. The sum total of all the genes a person inherits is called the:
    A) dominant pattern.
    B) additive pattern.
    C) phenotype.
    D) genotype.

13. An allele is:
    A) a normal variation of a particular gene.
    B) either an X or a Y.
    C) the gene that causes twins to develop.
    D) an individual's actual appearance and behavior.

14. Phenotype refers to:
    A) a person's total genetic inheritance.
    B) the recessive genes a person carries.
    C) the actual expression of traits.
    D) the dominant genes a person carries.

15. The first hours and days of human development involve the processes of:
    A) duplication, division, and differentiation.
    B) duplication, specialization, and progression.
    C) division, multiplication, and specialization.
    D) differentiation, division, and centralization.

16. In the first few hours after conception, the zygote(s):
    A) is in the process of becoming either a male zygote or a female zygote.
    B) suddenly splits into 46 similar cells.
    C) chromosomes duplicate and then split, forming two identical cells, then four, and so on.
    D) gamete is forming.
17. Differentiation refers to the process by which:
   A) zygotic cells specialize depending on where they are located.
   B) the single zygotic cell splits into two cells, then four cells, and so on.
   C) identical twins attempt to make a distinction between themselves.
   D) sperm and ova are formed.

18. Physical traits such as height are:
   A) totally determined by genetics.
   B) totally determined by environment.
   C) determined by environmental influences and genetic potential.
   D) not attributable to either genetics or environment.

19. The Human Genome Project taught us that:
   A) humans have about 1 million genes.
   B) all living creatures share genes.
   C) humans and chimpanzees share about 25 percent of their genes.
   D) human genes are not shared by any other species.

20. Because most traits are polygenic, they are:
   A) the result of dominant genes.
   B) constantly changing.
   C) produced by many genes.
   D) unaffected by the environment.

21. If a human characteristic is the result of the interaction of genes and the environment, the characteristic is considered to be:
   A) multifactorial.
   B) mosaical.
   C) dominant.
   D) additive.

22. Approximately 99 percent of human genes are also present in other creatures. Given the percentage of genes we share with cats, for example, why are we so different from them?
   A) Regulator genes that regulate genetic interaction determine the difference.
   B) Only humans possess chromosomes.
   C) Humanoid genes are absent in other species.
   D) Other animals have only 5,000 genes.

23. If your mom's family members all have very dark skin and your dad's family members all have very light skin, your skin color may be somewhere in between. Each parent's genes contributed in a(n) _____ fashion.
   A) dominant-recessive
   B) dizygotic
   C) additive
   D) nonadditive

24. The dominant-recessive pattern is:
   A) monozygotic.
   B) dizygotic.
   C) additive.
   D) nonadditive.
25. A gene is recessive when:
   A) it skips a generation.
   B) its influence can be hidden by a more powerful gene.
   C) it is smaller than the other genes.
   D) it does not appear in the genotype.

26. Color blindness is more common among males because:
   A) most color blindness is inherited by a recessive gene on the X chromosome.
   B) males have only one Y chromosome.
   C) most color blindness is inherited by a recessive gene on the Y chromosome.
   D) the gene for color blindness is a dominant gene.

27. Monozygotic twins:
   A) can be both male, both female, or one male and one female.
   B) originate from one zygote.
   C) are also known as fraternal twins.
   D) are genetically quite different.

28. Dizygotic twins result when:
   A) two ova are fertilized by two different sperm.
   B) one ovum splits and is then fertilized by two different sperm.
   C) one ovum is fertilized by a single sperm and the fertilized egg splits.
   D) monozygotic twins are of different sexes.

29. Cloning differs from giving birth to monozygotic twins because:
   A) the process involves two living creatures developing simultaneously.
   B) the process involves removing a cell from one living creature and making it develop into another living creature.
   C) the process involves implanting the embryonic offspring of two creatures into one host.
   D) the process involves splitting the zygote in half to produce two genetically identical creatures.

30. Identify the accurate statement about alcoholism:
   A) Alcoholism is entirely a genetic disorder.
   B) Alcoholism is genetic for men, but not for women.
   C) Alcoholism is entirely determined by your upbringing.
   D) Alcoholism is determined by both genetics and environment.

31. Pat is fourteen and is experiencing difficulty reading the board at school. At first, he did not want to wear glasses but changed his mind since a number of his friends were also needing classes. Why did the need for glasses increase?
   A) The rate of nearsightedness increases with puberty.
   B) Pat and his friends damaged their eyes by reading with inadequate lighting.
   C) Pat and his friends spent too much time outside playing.
   D) Glasses became more socially acceptable to wear.

32. Henry was adopted and is genetically predisposed toward alcoholism. However, his adoptive family does not drink; they actively avoid alcohol for religious reasons. Given Henry's genetic potential:
   A) he will most certainly become an alcoholic later in life.
   B) he may drink without worry as an adult because of his early upbringing.
   C) alcoholism might not appear in Henry's phenotype.
   D) alcoholism may alter his genotype.
33. Chromosomal abnormalities are most often associated with:
   A) paternal age.
   B) maternal age.
   C) environmental agents.
   D) use of illegal drugs.

34. A condition in which an individual has a mixture of cells, some normal and some with an incorrect number of chromosomes, is referred to as being:
   A) a carrier.
   B) mosaic.
   C) eclectic.
   D) trisomic.

35. Which of the following statements helps to explain why many more people carry abnormal genes than are affected by them?
   A) Many genetic problems are recessive.
   B) Good medical care prevents their expression.
   C) Most genetic disorders are phenotypic.
   D) Many genetic diseases are dominant.

36. The germinal period ends approximately:
   A) two days after conception.
   B) two months after conception.
   C) two weeks after conception.
   D) twelve weeks after conception.

37. The longest period of prenatal development is the:
   A) period of the embryo.
   B) period of the fetus.
   C) first trimester.
   D) germinal period.

38. The fragile and tiny cell mass that is composed of cells from the duplicated, divided, and differentiated zygote is called:
   A) a blastocyst.
   B) an embryo.
   C) a fetus.
   D) dizygotic.

39. During the germinal period, the first task of the outer cells is to:
   A) divide as rapidly as possible.
   B) differentiate into different types of tissue.
   C) implant in the uterus.
   D) find a permanent location in the ovaries.

40. When the blastocyst separates into two distinct masses approximately a week after conception, the masses will become the:
   A) stem cells and the neural cells.
   B) placenta and the embryo.
   C) heart and the brain.
   D) germinal cells and the fetal cells.
41. Which statistic accurately reflects the vulnerability of prenatal development?
   A) Only 31 percent of all conceptions become living newborn babies.
   B) Only 75 percent of fetuses reach the age of viability.
   C) 50 percent of fetuses are spontaneously aborted or stillborn.
   D) 10 percent of all fetuses die during birth.

42. The third period of prenatal development is the period of the:
   A) embryo.
   B) ovum.
   C) trimester.
   D) fetus.

43. Buds that will become arms and legs appear by the ______ week.
   A) third
   B) fourth
   C) fifth
   D) sixth

44. External sex organs are fully formed by the:
   A) fourth week after conception.
   B) sixth week after conception.
   C) twelfth week after conception.
   D) fifth month after conception.

45. The “age of viability” refers to the point when the preterm newborn:
   A) can survive.
   B) begins to move.
   C) will survive.
   D) has developed all its major organs.

46. The critical factor in attaining the age of viability is:
   A) weighing at least 5 pounds (2.3 kg).
   B) having adequate brain development.
   C) having functioning digestive and respiratory systems.
   D) surviving at least 28 weeks past conception.

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48. With excellent medical care, a fetus can survive if it is born as early as:
   A) 16 weeks after conception.
   B) 22 weeks after conception.
   C) 27 weeks after conception.
   D) 30 weeks after conception.

49. External sex organs are fully formed by the:
   A) fourth week after conception.
   B) sixth week after conception.
   C) twelfth week after conception.
   D) fifth month after conception.
50. During the embryonic period, the very first sign of human body structure appears as a thin line down the middle of the embryo. At its time of appearance, this thin line is called:
   A) the neural tube.
   B) the spine.
   C) the primitive streak.
   D) the central nervous system.

51. The first organ system that shows any sign of activity is the:
   A) respiratory system.
   B) digestive system.
   C) nervous system.
   D) cardiovascular system.

52. Pregnancy is most likely to end:
   A) before the germinal period.
   B) in spontaneous abortion in the period of the embryo.
   C) in spontaneous abortion in the period of the fetus.
   D) in induced abortion in the second trimester.

53. Approximately 10 days after conception:
   A) the male's sperm is deposited into the body of the female.
   B) the developing organism nestles into the lining of the uterus.
   C) fertilization of the ovum by sperm takes place
   D) the placenta begins to function

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   C) heart and the brain.
   D) germinal cells and the fetal cells.

55. During the germinal period, the first task of the outer cells is to:
   A) divide as rapidly as possible.
   B) differentiate into different types of tissue.
   C) implant in the uterus.
   D) find a permanent location in the ovaries.

56. Full-term pregnancies that are determined at the time of conception last:
   A) 34 weeks.
   B) 36 weeks.
   C) 38 weeks.
   D) 40 weeks.

57. The germinal period ends approximately:
   A) two days after conception.
   B) two months after conception.
   C) two weeks after conception.
   D) twelve weeks after conception.
58. Approximately what percentage of zygotes successfully become implanted?
   A) 20 percent
   B) 40 percent
   C) 70 percent
   D) 90 percent

59. In a normal uncomplicated birth, the position of presentation is:
   A) head first.
   B) knees first.
   C) buttocks first.
   D) feet first.

60. In a first birth, the average length of active labor is:
   A) several days.
   B) about 12 hours.
   C) about 8 hours.
   D) only a few minutes.

61. The baby is born at the end of:
   A) the first stage of labor.
   B) transition.
   C) the second stage of labor.
   D) the third stage of labor.

62. The five characteristics that are evaluated in the Apgar are:
   A) the Babinski, Moro, stepping, swimming, and grasping reflexes.
   B) heart rate, breathing, muscle tone, color, and reflexes.
   C) cuddling, startling, irritability, vocal response, and visual response.
   D) sucking reflex, breathing reflex, size, weight, and disease symptoms.

63. The Apgar is used one minute and five minutes after birth to:
   A) measure sensory abilities.
   B) measure the health of the new mother.
   C) help the mother recover from childbirth.
   D) determine whether the newborn needs immediate medical care.

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

65. Low birthweight:
   A) means weighing less than three pounds (1,400 g) at birth.
   B) affects more than 8% of all U.S. newborns.
   C) affects at least 10% of the babies in every nation of the world.
   D) means a newborn is more likely to die than to live.

66. Infants born more than three weeks early are called:
   A) low birthweight.
   B) premature.
   C) miracles.
   D) preterm.
67. Kyoto’s daughter is five days old. Kyoto is feeling sad and inadequate. She may be experiencing:
   A) postpartum depression.
   B) isolette.
   C) vernix.
   D) postnatal anoxia.

68. The period of the fetus lasts:
   A) during the last three months before the child’s birth.
   B) from the midway point of prenatal development until birth.
   C) from the second until the eighth week after conception.
   D) from nine weeks after conception until birth.

69. Full-term pregnancies typically last:
   A) 32 weeks from the date of conception.
   B) 34 weeks from the date of conception.
   C) 36 weeks from the date of conception.
   D) 38 weeks from the date of conception.

70. What percentage of embryos are aborted spontaneously?
   A) 5
   B) 20
   C) 31
   D) 40

71. A teratogen is:
   A) damage sustained to the placenta.
   B) a substance or a condition that can increase the risk of prenatal abnormalities.
   C) a cell with extra chromosomes.
   D) waste products from the embryo.

72. Infants born more than three weeks early are called:
   A) low birthweight.
   B) premature.
   C) miracles.
   D) preterm.

73. Approximately 14 days after conception:
   A) cell differentiation occurs.
   B) implantation occurs.
   C) the period of the embryo begins.
   D) the period of the fetus begins.

74. A teratogen is:
   A) damage sustained to the placenta.
   B) a substance or a condition that can increase the risk of prenatal abnormalities.
   C) a cell with extra chromosomes.
   D) waste products from the embryo.
75. Teratogens that harm the prenatal brain are called ______ teratogens, because they can make the child hyperactive, antisocial, or learning disabled.
   A) cognitive
   B) cephalic
   C) behavioral
   D) remedial

76. Brain waves indicate responsiveness in the fetus:
   A) in the first trimester.
   B) in the second trimester.
   C) in the third trimester.
   D) starting at birth.

77. One of the first teratogens to be recognized was:
   A) rubella.
   B) alcohol.
   C) heroin.
   D) the common cold.

78. During prenatal development, a particular organ or body part is most vulnerable to exposure to teratogens during the:
   A) critical period.
   B) vulnerability period.
   C) period of viability.
   D) period of the fetus.

79. Some teratogens are harmless until they reach a certain level of exposure; they then become dangerous, thus demonstrating the:
   A) critical period effect.
   B) threshold effect.
   C) fetal teratogen effect.
   D) interaction effect.

80. The condition where one substance intensifies the effects of another substance is the:
   A) critical period effect.
   B) threshold effect.
   C) fetal teratogen effect.
   D) interaction effect.

81. More than 50,000 units of this vitamin can cause fetal abnormalities:
   A) E
   B) B12
   C) B6
   D) A

82. The heart is the most susceptible to developing birth defects:
   A) during the first two weeks after conception.
   B) between the third and sixth weeks after conception.
   C) between the eighth and twelfth weeks after conception.
   D) during the two months immediately before birth.
83. Research in genetic vulnerability to teratogens has found that:
   A) fraternal twins are equally vulnerable.
   B) female embryos are more vulnerable than males.
   C) genetic vulnerability guarantees a birth defect of some sort.
   D) the XY chromosome pattern is more susceptible to damage.

84. Since genes are known to affect the chance of neural-tube defects, pregnant women are urged to begin taking vitamins with folic acid:
   A) before becoming pregnant.
   B) as soon as they learn they are pregnant.
   C) during the first trimester.
   D) during the second trimester.

85. Since 1996, neural-tube defects have decreased by over 25 percent in the United States and Canada. No decrease has occurred in Europe. What is the reason for the decrease in the United States and Canada?
   A) Environmental changes in climate are responsible.
   B) Physicians routinely check for neural-tube defects at birth, thus causing the decrease.
   C) Cereals and breads in the United States and Canada are now fortified with folic acid.
   D) Europeans are genetically predisposed to neural-tube defects.

86. A cluster of birth defects, including abnormal facial characteristics, slow physical growth, and retarded mental development is associated most closely with which of the following?
   A) fetal alcohol syndrome
   B) fetal alcohol effects
   C) polychlorinated biphenyls (PCBs)
   D) toxoplasmosis

87. An example of a psychoactive drug is:
   A) lithium.
   B) Phenobarbital.
   C) caffeine.
   D) thalidomide.

88. Dizygotic twins exposed to the same teratogens during pregnancy experience:
   A) the same effects of the teratogens.
   B) different effects of the teratogens.
   C) no effects of the teratogens since the twins protect each other.
   D) amplified effects of the teratogens since there are two fetuses.

89. Monique contracted rubella early in her pregnancy. Damage is most likely to affect the embryo's:
   A) eyes.
   B) arms or legs.
   C) breathing.
   D) bloodstream.