Test Bank for HDEV 4th Edition by Rathus

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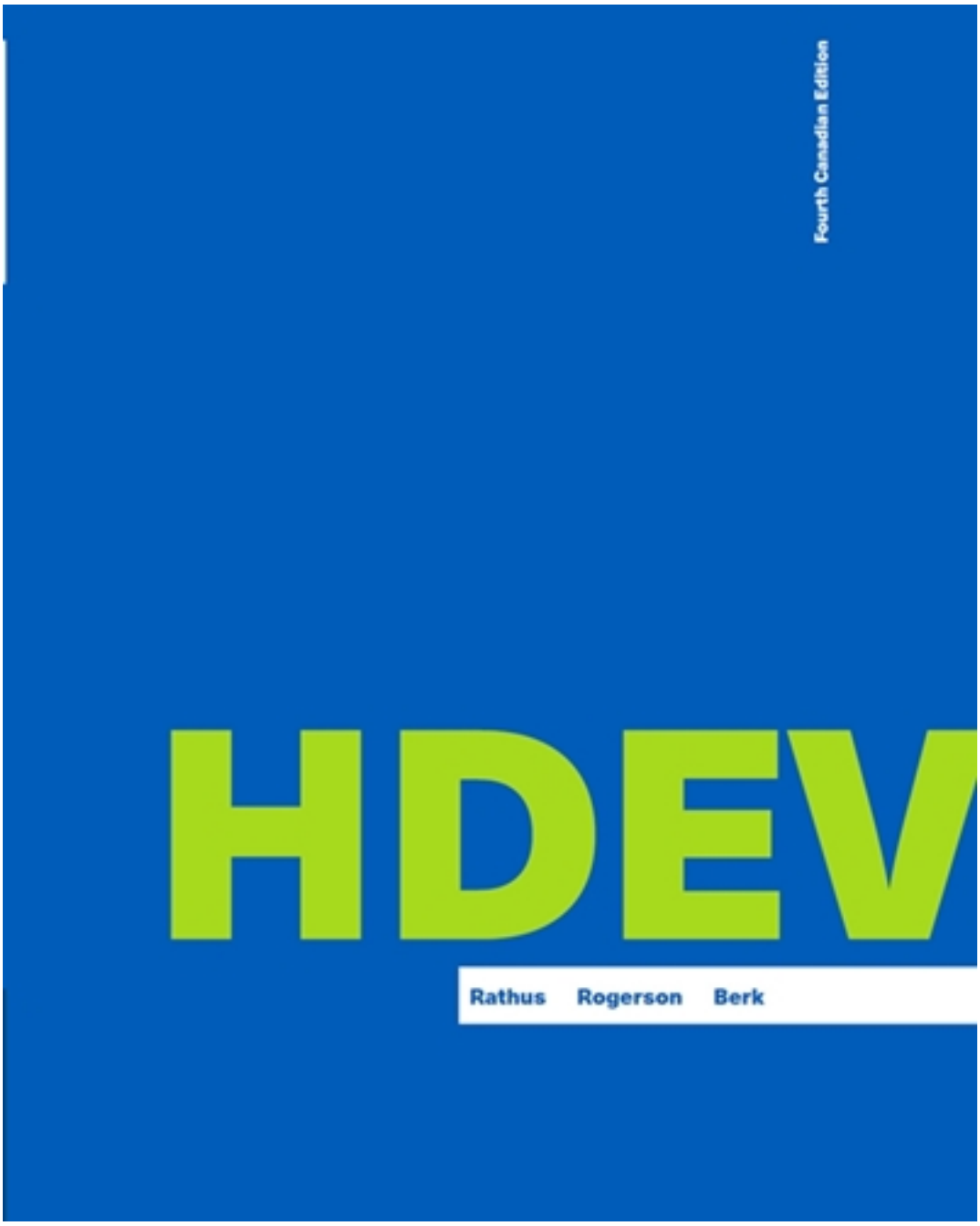

Test Bank

TRUE/FALSE

1 : The science of heredity is called "eugenics."
A : true
B : false

Correct Answer : B

2 : Each cell in our body contains 26 chromosomes.
A : true
B : false

Correct Answer : B

3 : Genes are the biochemical materials that regulate the development of traits.
A : true
B : false

Correct Answer : A

4 : DNA takes the form of a double helix, or twisting ladder, is made up of base pairs, and determines how the organism will develop.
A : true
B : false

Correct Answer : A

5 : After mitosis, a cell has 23 pairs of chromosomes.
A : true
B : false

Correct Answer : A

6 : Polygenic traits are transmitted by a single pair of genes.
A : true
B : false

Correct Answer : B

7 : Sex chromosomes utilize meiosis to divide.
A : true
B : false

Correct Answer : A

8 : The typical sex chromosome pattern for females is XY.
A : true
B : false

Correct Answer : B

9 : Monozygotic twins are conceived from separate egg cells.

A : true
B : false

Correct Answer : B

10 : Huntington disease is a fatal, progressive degenerative disorder and a recessive trait.
A : true
B : false

Correct Answer : B

11 : "Carriers" for traits have two recessive genes for those traits.
A : true
B : false

Correct Answer : B

12 : Type A blood is a recessive trait.
A : true
B : false

Correct Answer : B

13 : PKU is transmitted by a dominant gene.
A : true
B : false

Correct Answer : B

14 : Genetic counselling is used only prior to a woman getting pregnant.
A : true
B : false

Correct Answer : B

15 : Our phenotype is influenced by the environment.
A : true
B : false

Correct Answer : A

16 : Parents and children have 25% overlap in genes.
A : true
B : false

Correct Answer : B

17 : Low sperm count is the most common infertility problem in men.
A : true
B : false

Correct Answer : A

18 : Monozygotic twins reared apart share just as many similarities in temperament and personality as monozygotic twins reared together.
A : true
B : false

Correct Answer : A

19 : A person who has a dominant trait for brown eyes and a recessive trait for blue eyes is most likely to be brown-eyed.
A : true
B : false

Correct Answer : A

20 : Diabetes mellitus, epilepsy, and peptic ulcers are caused by genetic factors alone.
A : true
B : false

Correct Answer : B

21 : Down syndrome is associated with an extra chromosome on the 21st pair.
A : true
B : false

Correct Answer : A

22 : Sickle-cell anemia is more common among Caucasian North Americans than minority groups in the North America.
A : true
B : false

Correct Answer : B

23 : Most people with Tay-Sachs disease die in their mid- to late-forties.
A : true
B : false

Correct Answer : B

24 : Hemophilia is a type of sex-linked genetic abnormality.
A : true
B : false

Correct Answer : A

25 : Ultrasound uses harmless sound waves to examine the developing organism.
A : true
B : false

Correct Answer : A

26 : Amniocentesis and CVS have no known risks to the unborn embryo.
A : true

B : false

Correct Answer : B

27 : Monozygotic twins share more personality traits and physical traits than dizygotic twins.
A : true
B : false

Correct Answer : A

28 : Women create viable ova throughout their lives, from their first period through menopause.
A : true
B : false

Correct Answer : B

29 : Sperm are responsible for determining the gender of the offspring.
A : true
B : false

Correct Answer : A

30 : Infertility is always the woman’s problem.
A : true
B : false

Correct Answer : B

31 : Artificial insemination involves implanting a viable embryo into the uterus of a woman.
A : true
B : false

Correct Answer : B

32 : Physicians may treat endometriosis through surgery or with hormones that temporarily prevent menstruation.
A : true
B : false

Correct Answer : A

33 : It is currently impossible to select the sex of one’s child.
A : true
B : false

Correct Answer : B

34 : During the germinal period of development, the ovum is fertilized, cells divide, and the blastocyst is implanted in the uterine wall.
A : true
B : false

Correct Answer : A

35 : Nearly one-third of all pregnancies result in miscarriage.
A : true
B : false

Correct Answer : A

36 : The major organ systems differentiate during the embryonic period of development.
A : true
B : false

Correct Answer : A

37 : Sexual differentiation of the embryo is determined by the presence of the X chromosome.
A : true
B : false

Correct Answer : B

38 : The placenta protects the developing organism from all harmful substances.
A : true
B : false

Correct Answer : B

39 : During the fetal period of prenatal development, the fetus responds to light and sounds.
A : true
B : false

Correct Answer : A

40 : During the ninth month of pregnancy, the fetus becomes more active, getting ready for the birth process.
A : true
B : false

Correct Answer : B

41 : Since fetuses take what they need from the mothers, few babies are born malnourished.
A : true
B : false

Correct Answer : B

42 : Fetuses “take what they need” nutritionally from the mother and therefore mothers are free to eat what they want.
A : true
B : false

Correct Answer : B

43 : Teratogens include drugs, heavy metals, and disease-causing organisms.
A : true

B : false

Correct Answer : A

44 : Teratogens have the same effect on the developing organism throughout pregnancy.
A : true
B : false

Correct Answer : B

45 : Diseases such as syphilis and HIV/AIDS are rarely harmful to the fetus or newborn infant.
A : true
B : false

Correct Answer : B

46 : Rubella causes deafness, intellectual challenges, and heart problems.
A : true
B : false

Correct Answer : A

47 : Toxemia may cause maternal deaths.
A : true
B : false

Correct Answer : A

48 : Rh incompatibility is primarily a problem after a first pregnancy.
A : true
B : false

Correct Answer : A

49 : Commonly used drugs such as aspirin rarely cause problems for fetuses.
A : true
B : false

Correct Answer : B

50 : Thalidomide causes major limb deformities during pregnancy.
A : true
B : false

Correct Answer : A

51 : DES was used to prevent miscarriage in the 1940s and 1950s but caused cervical and testicular cancer in some offspring.
A : true
B : false

Correct Answer : A

52 : Vitamins cause no harm in developing fetuses.
A : true
B : false

Correct Answer : B

53 : Use of illicit drugs such as marijuana, heroin, and cocaine during pregnancy may cause offspring to have cognitive impairments later in life.
A : true
B : false

Correct Answer : A

54 : Babies born to fathers who smoke cigarettes have higher rates of birth defects.
A : true
B : false

Correct Answer : A

55 : Environmental hazards such as lead and radiation may cause irreparable, long-term harm both physically and cognitively.
A : true
B : false

Correct Answer : A

56 : The ages of both parents have been found to impact the health of a baby.
A : true
B : false

Correct Answer : A

SHORT RESPONSE

57 : Briefly describe the difference(s) between cell division as the result of "meiosis" and cell division as the result of "mitosis."

Correct Answer : Meiosis is also referred to as "reduction division." In other words, the 46 chromosomes within the cell nucleus line up into 23 pairs. These 23 pairs then split and one member from each pair goes to each newly formed cell. Because of this process, the newly formed cells have half the genetic material contained in the original cell. In this sense, the cells are not identical but share 50 percent genetic similarity. With mitosis, the identical genetic code is carried into each newly formed cell in the body. In other words, when these cells divide, the resulting cells will be identical to the cells that divided to form them. Cloning results from mitosis. Because the newly formed cells are "replications" of the preceding cell, the new cells show no genetic variability.

58 : Briefly describe the difference(s) between "recessive" and "dominant" genes.

Correct Answer : Some genes are "dominant" and others are "recessive." Dominant genes are more likely to be expressed than recessive genes. Eye colour is a good example. With eye

colour, brown eyes are dominant and blue eyes are recessive. If one parent carries the gene for brown eyes only and the other for blue eyes only, the offspring will have brown eyes (that colour will dominate). If, however, both parents carry recessive genes for blue eyes, those genes can combine and blue eyes will be expressed. In a sense, two recessive genes can overcome the dominance of a single gene.

59 : Describe two examples of recessive genetic disorders.

Correct Answer : Recessive disorders: Sickle-cell anemia is a recessive disorder because both parents must contribute a recessive allele for the disorder for the offspring to display sickle-cell anemia. In this disorder, the red blood cells become sickle-shaped, which allows less oxygen to be carried in the body. This lack of oxygen may impair cognitive abilities. Tay-Sachs disease is another recessive disorder, again, a result of both parents contributing a recessive allele for the disease. Tay-Sachs causes the central nervous system to degenerate with a loss in sensory abilities, mental ability, and then death by approximately age 5.

60 : What is "amniocentesis?" When is it likely to be performed and what can be determined by doing so?

Correct Answer : Amniocentesis is a procedure that is sometimes used to detect genetic abnormalities in unborn children. The procedure involves withdrawing fluid from the amniotic sac that contains the fetus. Fetal cells that are contained in the fluid can then be examined for genetic abnormalities. This procedure is more likely to be performed in mothers over the age of 35 because of their increased risk for disorders such as Down’s syndrome. Additionally, this procedure may be recommended in cases where the parents have a familial history for Tay-Sachs, muscular dystrophy, or Rh incompatibility.

61 : A friend has asked you to describe the difference between "genotype" and "phenotype." On the basis of the material in Chapter Two of the textbook, how would you describe the difference?

Correct Answer : Genotype refers to the genetic material that is received from one's parents. Characteristics such as blood type and eye colour, for example, are determined by our genotype. Genotype determines a range in which we might develop. It might, for example, determine how intelligent we could become. But genotype alone does not determine who or what we become. Our phenotype refers to how our characteristics are expressed. Someone might, for example, have the potential to grow quite tall, but the environment and other forces, such as nutrition, may influence how much of that genotype potential for height is realized. Phenotypes, then, are the product of both genetic and environmental influences.

62 : How does studying monozygotic and dizygotic twins help in understanding the genetic basis for a trait or behaviour?

Correct Answer : Monozygotic twins are identical in their genetic endowment, whereas dizygotic twins share as much of their genetics as non-twin siblings do. This difference allows researchers to tease apart the relative contributions of genetics and environment for a variety of different traits and behaviours, such as temperament, intelligence, and personality. When monozygotic twins have very different characteristics, the likelihood is greater that genetics are not involved or at least are less involved in the development process. It is not always possible to determine whether a specific characteristic is genetically determined; however, monozygotic twins often are treated in very similar ways as a result of appearing to be so similar.

63 : Describe two different methods of helping infertile couples.

Correct Answer : In vitro fertilization involves extracting ripened ova from a woman and introducing them to a man's sperm in a laboratory dish. Following fertilization, the fertilized ovum is then injected into the woman's uterus. In some cases, such as when the woman is unable to release her own viable eggs, the ova may be sourced from a donor. Some infertile couples use a surrogate mother. The surrogate mother may use either her own ova or those of another woman and the sperm of either the biological father or another donor; she then carries the resulting baby to term. Surrogate mothers are often compensated financially for their time and effort.

64 : What are some of the major fertility problems for males and females? What are possible causes of these problems?

Correct Answer : For males, the primary fertility problems include low sperm count, deformed and low sperm motility, and chronic diseases such as diabetes. Men's fertility problems have a variety of causes: genetic factors, environmental poisons, diabetes, sexually transmitted infections (STIs), overheating of the testes (which is sometimes experienced by athletes, such as long-distance runners), pressure (as from using narrow bicycle seats), aging, and certain prescription and illicit drugs. Sometimes the sperm count is adequate, but the sperm may have been deformed or deprived of their motility by other factors, such as prostate or hormonal problems. Motility can also be impaired by the scar tissue from infections such as STIs.For females, the primary fertility problems are irregular ovulation, declining hormones levels, endometriosis, and obstructions or malfunctions of the reproductive tract. Infections may scar the fallopian tubes and other organs, impeding the passage of sperm or ova. Such infections include pelvic inflammatory disease (PID). PID can result from bacterial or viral infections, including the STIs gonorrhea and chlamydia.

65 : What is a teratogen? Describe two teratogens and their effects on the developing organism.

Correct Answer : Thalidomide was a drug used during the 1960s to control insomnia and nausea in pregnant women. This drug led to the birth of thousands of babies with severe limb malformations. Alcohol use during pregnancy may cause facial and other abnormalities, mental retardation, hyperactivity, and other cognitive deficits.

66 : A friend of yours is pregnant. She has read about the potential problems that could occur with a pregnancy. On the basis of this chapter, what three pieces of advice would you offer to ease her concerns for her unborn child?

Correct Answer : The chances of problems during pregnancy are enhanced by external factors such as toxins (alcohol, smoking) and maternal characteristics (such as genetics and age at conception). Some of these factors can be minimized and/or avoided. If your friend is really worried, she may want to consider genetic counselling to learn whether she needs to be aware of any serious disorders. Additionally, however, genetic screening procedures bring some element of risk to the pregnancy. The best thing the mother can do is to make the fetal environment as healthy as possible. She can exercise, take prenatal vitamins, eat a balanced diet, and refrain from smoking or ingesting alcohol and other drugs. Lastly, her overall chances of delivering a healthy child are significantly higher than her chances of having a child with a disease or a disorder.

MULTIPLE CHOICE

67 : What is the definition of heredity?
A : the molecular structure of the rod-shaped structures located in the cells
B : physical traits determined by the combining of various genes
C : the cell division process by which growth occurs and tissues are replaced
D : ones nature, which is based on biological transmission of genetic material.

Correct Answer : D

68 : Next year you will be pursuing an education in the field of heredity. If someone asked you what exactly you will be studying, which word would you most likely use?
A : etiology
B : genetics
C : biology
D : eugenics

Correct Answer : B

69 : Which of the following is influenced by genetics?
A : resilience
B : eye colour
C : motivation
D : friendship choices

Correct Answer : B

70 : What is the meaning of “heredity”?
A : the manifestation of traits in a person’s characteristics
B : the biological transmission of traits and characteristics
C : the combination of genes that influence our phenotype
D : the division of cells that determine the person we become

Correct Answer : B

71 : What is the name of the thousands of segments contained in chromosomes?
A : nuclei
B : genes
C : cytosine
D : phosphates

Correct Answer : B

72 : If you were to paint a picture of a chromosome, what shape would you depict?
A : a rod
B : a cone
C : a circle
D : an octagon

Correct Answer : A

73 : At the moment of conception, how many chromosomes does a healthy zygote contain?
A : 20
B : 32
C : 46

D : 48

Correct Answer : C

74 : What characteristic is unique about polygenic traits?
A : They are uncommon in humans.
B : They are transmitted only by the female.
C : They are determined by many pairs of genes.
D : They are transmitted by a single pair of genes.

Correct Answer : C

75 : You are a science teacher and one of your students asks: “How many genes ultimately govern our heredity?” What is your reply?
A : We have 1,000 to 1,500 genes in our cells.
B : We have 10,000 to 20,000 genes in our cells.
C : We have 20,000 to 25,000 genes in our cells.
D : We have 25,000 to 35,000 genes in our cells.

Correct Answer : C

76 : DNA takes the form of what physical shape?
A : a zipper
B : a straight ladder
C : a twisting ladder
D : interlocking circles

Correct Answer : C

77 : What branch of science includes the study of genetics?
A : chemistry
B : physics
C : biology
D : psychology

Correct Answer : C

78 : Which scenario results in conjoined twins?
A : Two ova are produced and fertilized by joined sperm cells.
B : Two eggs fail to separate on the 13th day after conception.
C : Two different sperm fertilize the same egg.
D : Cell mutation takes place prior to the end of the first trimester.

Correct Answer : B

79 : Richard and Alice have just conceived. They joke, by stating “they are building a baby.” Precisely how many chromosomes will Alice contribute?
A : 13
B : 23
C : 46
D : 92

Correct Answer : B

80 : What is the function of genes?
A : They regulate the development of traits.
B : They decide the gender of the child.
C : They hardwire people for certain levels of some traits.
D : They work together with lutein to influence development.

Correct Answer : A

81 : What does DNA stand for?
A : dionucleic acid
B : dionyotic acetate
C : deoxyribonucleic acid
D : diophosphate nucleic acetone

Correct Answer : C

82 : What is formed during mitosis?
A : mutation
B : 23 chromosomes
C : sperm and ova cells
D : new cells with identical DNA

Correct Answer : D

83 : What is another term for "reduction division"?
A : mitosis
B : meiosis
C : cell death
D : neural pruning

Correct Answer : B

84 : What method of cell reproduction allows for more genetic "variability”?
A : cloning
B : meiosis
C : mitosis
D : cross-fertilization

Correct Answer : B

85 : Of the 23 pairs of chromosomes, 22 pairs look alike and possess genetic information concerning the same traits. What term refers to these 22 pairs of chromosomes?
A : autosomes
B : sperm cells
C : sex chromosomes
D : identical chromosomes

Correct Answer : A

86 : How many chromosomes are contained in a cell created during meiosis?
A : 23
B : 25

C : 43
D : 46

Correct Answer : A

87 : What factor determines the sex of a child?
A : the presence of diamniotic acetate in the uterus
B : the sex chromosome received from the father
C : the time in the ovulation cycle when conception occurs
D : the presence or absence of teratogens at the time of conception

Correct Answer : B

88 : Baby A has two X chromosomes while Baby B has an X chromosome and a Y chromosome. What can you conclude about these two babies?
A : The babies will have different hair colour.
B : Baby A is a girl and Baby B is a boy.
C : Baby A is a boy and Baby B is a girl.
D : Baby A suffers a genetic error and Baby B is healthy.

Correct Answer : B

89 : You are out with your friends and you want to dazzle them with your new child development knowledge. You decide to inform your friend Peter of his chromosome pattern. Which pattern do you describe?
A : XX
B : XY
C : XYY
D : XXY

Correct Answer : B

90 : What is the result of a zygote that divides into two cells that separate?
A : mitosis
B : dizygotic twins
C : cross-fertilization
D : monozygotic twins

Correct Answer : D

91 : A woman gives birth to dizygotic twins. Without having met this woman, what do you know about her?
A : She is a young mother.
B : She is of Asian descent.
C : She has a decreased chance of subsequent pregnancies.
D : She has an increased chance of giving birth to twins in future pregnancies.

Correct Answer : D

92 : What term describes each member of a pair of genes?
A : an allele
B : an autosome
C : a homozygous trait

D : a heterozygous trait

Correct Answer : A

93 : What term describes a person who has two alleles for the same trait?
A : dizygotic
B : homozygous
C : monozygotic
D : heterozygous

Correct Answer : B

94 : A person who inherits a gene for blonde hair and a gene for brown hair will have brown hair. What can we conclude about the gene for brown hair?
A : It is more common.
B : It is recessive.
C : It is dominant.
D : It is rare.

Correct Answer : C

95 : What is a defining characteristic of a recessive gene?
A : It is expressed when it is paired with another recessive gene.
B : It is expressed only when it is paired with a dominant gene.
C : It is expressed regardless of whether it is paired with a recessive or a dominant gene.
D : It is rarely passed on to offspring.

Correct Answer : A

96 : What can we conclude about a boy with two alleles for brown eyes?
A : He has blue eyes.
B : He is referred to as "atypical."
C : He is homozygous for eye colour.
D : He has eye colour as a co-dominant trait.

Correct Answer : C

97 : Which of the following is a characteristic of dominant alleles?
A : They cause traits in individuals when paired with recessive alleles.
B : They come from the father of the developing child.
C : They are determined during mitosis.
D : They are determined by the parents during the germinal period.

Correct Answer : A

98 : Which of the following results from a dominant trait?
A : type O blood
B : straight hair
C : myopia
D : farsightedness

Correct Answer : D

99 : Cathy and Doug both have brown eyes. If their child has blue eyes, what can we conclude about Cathy's and Doug's genes for blue eyes?
A : Both Cathy and Doug must be carrying a recessive gene for blue eyes.
B : Either Cathy or Doug must be carrying a recessive gene for blue eyes.
C : Both Cathy and Doug must be carrying a dominant gene for blue eyes.
D : Either Cathy or Doug must be carrying a dominant gene for blue eyes.

Correct Answer : A

100 : Jill carries two genes for brown eyes, and Jack carries two genes for blue eyes. What can we predict about their child's eye colour?
A : Their child will have a 50% chance of having brown eyes.
B : Their child will have a 75% chance of having brown eyes.
C : Their child will have a 100% chance of having blue eyes.
D : Their child will have a 100% chance of having brown eyes.

Correct Answer : D

101 : Maria and Eric are told they are "carriers" of a particular trait? What does that mean?
A : They bear co-dominant genes for a trait.
B : They bear two dominant genes for a trait.
C : They carry two recessive genes for a trait.
D : They carry one recessive and one dominant gene for a trait.

Correct Answer : D

102 : A girl who has cystic fibrosis has moved into your neighbourhood. Without having met her, what do you know about her?
A : She has a younger mother.
B : She has more than 23 chromosomal pairs.
C : She cannot metabolize phenylalanine.
D : She did not have a dominant gene to cancel out the cystic fibrosis.

Correct Answer : D

103 : Which condition is caused by abnormalities in the 22 pairs of autosomes?
A : cystic fibrosis
B : Down syndrome
C : sex-linked chromosomal abnormalities
D : myopia

Correct Answer : B

104 : Which of the following is an essential attribute of Down syndrome?
A : It is caused by a virus during pregnancy.
B : It is significantly more likely in boys than girls.
C : It is caused by a defect on the sex chromosomes.
D : It impacts cognitive and motor development but not one's potential for achievement.

Correct Answer : D

105 : What is the diagnosis of an infant born with 47 chromosomes instead of 46?
A : phenylketonuria

B : sickle-cell anemia
C : Down syndrome
D : Tay-Sachs disease

Correct Answer : C

106 : What is the cause of Down syndrome?
A : alcohol abuse by the father
B : alcohol abuse by the mother
C : sex-linked chromosomal abnormalities
D : abnormalities of the 21st pair of chromosomes

Correct Answer : D

107 : Which symptom describes Huntington disease (HD)?
A : infertility
B : an inability to metabolize an amino acid
C : an inability to control movements and emotions
D : complications such as blindness

Correct Answer : C

108 : According to the Huntington Society of Canada, when is Huntington disease (HD) typically diagnosed?
A : between 12 and 18 years of age
B : in middle adulthood
C : before age 40 in women and 50 in men
D : after the age of 60 years of age

Correct Answer : B

109 : Which person has a recessive trait?
A : Jack, who has dimples
B : Martha, who has red hair
C : Janice, who has been diagnosed as being farsighted
D : David, who has very curly hair

Correct Answer : B

110 : Which person has a dominant trait?
A : Andrea who has myopia
B : Richard who has red-green colour blindness
C : Lynne who has Type O blood
D : Wayne who has Type B blood

Correct Answer : D

111 : What is a common characteristic of most individuals who have an abnormal number of sex chromosomes?
A : They have flat faces.
B : They are infertile.
C : They have more body hair than normal.
D : They have round faces.

Correct Answer : B

112 : What does the Canadian Down Syndrome Society tell parents of children with Down Syndrome?
A : High expectations and lots of support are key to ensuring the success of their child.
B : Putting a child with Down syndrome into mainstream schools is harmful.
C : Finding a special program that will have low expectations for learning and development is critical.
D : Outlining the child's deficits early on prevents unrealistic expectations.

Correct Answer : A

113 : When are Canadians screened for phenylketonuria?
A : prior to birth
B : at birth
C : at the age of 6 months
D : upon entering kindergarten

Correct Answer : B

114 : Queen Victoria was a carrier of which of the following?
A : myopia
B : red-green colour blindness
C : phenylketonuria
D : hemophilia

Correct Answer : D

115 : What type of disorder is phenylketonuria?
A : an enzyme disorder
B : a disorder transmitted by a dominant gene
C : a disorder that manifests itself in all children of carriers
D : a disorder caused by alcohol consumption during pregnancy

Correct Answer : A

116 : Joshua was born with an inherited disease that blocked the development of an enzyme critical for development. Over time, Joshua has developed profound intellectual challenges. What disorder does Joshua have?
A : Tay-Sachs disease
B : sickle-cell anemia
C : phenylketonuria
D : Down syndrome

Correct Answer : C

117 : Children with PKU will develop normally if they are placed on a special diet. What does their special diet exclude?
A : phenyl acids
B : aproteins
C : ketones
D : phenylalanine

Correct Answer : D

118 : Your friends are considering starting a family and one of them has Huntington disease. What can you tell the couple about the likelihood of giving birth to a child who also has Huntington disease?
A : They have a 10% chance of giving birth to a child with Huntington disease.
B : They have a 50% chance of giving birth to a child with Huntington disease.
C : They have a 75% chance of giving birth to a child with Huntington disease.
D : They have a 100% chance of giving birth to a child with Huntington disease.

Correct Answer : B

119 : You are a pregnant woman who has just consulted a genetic counsellor. You are concerned about Huntington disease and ask what progress is being made to address it. You are told that clinical trials into a “genetic miracle” are underway. What have trials revealed?
A : a preventive medication that can be taken by pregnant women
B : an injection to the spine that appears to stop the progress of the disease
C : a cocktail of medications to be taken by infants to prevent the disease
D : an injection to the amniotic sac to cure the disease in babies

Correct Answer : B

120 : Janet has Huntington disease and knows that approximately half of her children will also have Huntington disease. What will cause this disease to occur in her children?
A : a blood disorder
B : a recessive trait
C : a dominant trait
D : a personality disorder

Correct Answer : C

121 : Which person is most likely to develop sickle-cell anemia?
A : a person of Asian descent
B : a person of African descent
C : a person of Irish descent
D : a person of Jewish descent

Correct Answer : B

122 : What is the cause of sickle-cell anemia?
A : a recessive gene
B : a slow destruction of the liver leading to jaundice and swollen joints
C : white blood cells that take on the shape of a sickle and clump together
D : red blood cells that expand the blood vessels and increase the oxygen supply

Correct Answer : A

123 : Trevor is an African-Canadian child who was born with a disease that altered the shape of his blood cells. He has impaired cognitive skills, acute pain, and is blind. What disorder does Trevor have?
A : phenylketonuria
B : sickle-cell anemia
C : Down syndrome

D : Tay-Sachs disease

Correct Answer : B

124 : Your sister tells you her friend's child has been diagnosed with Tay-Sachs disease. Your sister asks you what you know about this disease. What do you tell her?
A : It is caused by a dominant gene.
B : It is linked to the X chromosome.
C : It affects the pancreas and the lungs.
D : It is a fatal degenerative disease of the central nervous system.

Correct Answer : D

125 : Which individual is most likely to have Tay-Sachs disease?
A : a 4-year-old child of Jewish descent
B : a 5-year-old child of European descent
C : a 10-year-old child of African descent
D : a 20-year-old male of Spanish descent

Correct Answer : A

126 : Two-week-old Isaiah, a child of Jewish heritage, is most at risk of having which disease?
A : sickle-cell anemia
B : hemophilia
C : Huntington disease
D : Tay-Sachs disease

Correct Answer : D

127 : Debbie was born with a disease that has left her without an enzyme required for neurological functioning. Her doctors predict that she will not live beyond the age of 5 years. What disorder does Debbie have?
A : sickle-cell anemia
B : Down syndrome
C : Tay-Sachs disease
D : phenylketonuria

Correct Answer : C

128 : According to the Canadian Cystic Fibrosis Foundation, what is a published fact about cystic fibrosis?
A : It is the least common fatal hereditary disease among Canadians.
B : It results from an abnormality on the 20th pair of chromosomes.
C : It is a blood disorder common to those with an Eastern European background.
D : It affects approximately 1 in every 3,500 Canadians.

Correct Answer : D

129 : What is the cause of cystic fibrosis?
A : a recessive gene
B : a dominant gene
C : incomplete mitosis
D : an abnormality in the 21st pair of chromosomes

Correct Answer : A

130 : Which of the following is a defining characteristic of hemophilia?
A : It affects only females.
B : It is carried by the father's recessive gene.
C : It is carried on the X chromosome.
D : It is caused by damage to the 14th chromosomal pair.

Correct Answer : C

131 : What disorder is caused by a sex-linked genetic abnormality?
A : hemophilia
B : Tay-Sachs disease
C : cystic fibrosis
D : Huntington disease

Correct Answer : A

132 : Which statement best describes colour blindness?
A : It is an enzyme disorder.
B : It is a disorder found only in children.
C : It is a protein-based disorder.
D : It is a sex-linked disorder.

Correct Answer : D

133 : Why are sex-linked diseases more likely to affect sons of female carriers?
A : These diseases are carried on dominant genes.
B : These diseases are carried on the Y chromosome.
C : Females are at a diminished risk because they could inherit a XYY profile.
D : Males have only one X chromosome, which they inherit from their mothers.

Correct Answer : D

134 : What is the primary purpose of genetic counselling?
A : to outline the genetic risks of unprotected sex
B : to advise couples to abort their unborn children
C : to prove that a child will develop a certain illness
D : to assist would-be parents in making decisions about having children

Correct Answer : D

135 : Dr. White specializes in prenatal medicine and performs numerous amniocenteses each year. Which woman is Dr White most likely to recommend for an amniocentesis?
A : an Asian-Canadian woman
B : an African-Canadian woman
C : a woman older than age 35
D : a woman younger than age 20

Correct Answer : C

136 : You are scheduled to have an amniocentesis. What will occur during this medical

process?
A : Fluid will be tested from the "sac" containing the fetus.
B : A biopsy will be taken from your spine.
C : Your sperm will be tested for genetic abnormalities.
D : Your eggs will be tested for genetic abnormalities.

Correct Answer : A

137 : What is the biggest risk of amniocentesis?
A : cognitive delay in 1 of every 100 births
B : cesarean delivery in 1 of every 100 births
C : sterility in 1 of every 100 births
D : fetal loss in one half of one percentage of all pregnancies

Correct Answer : D

138 : When is amniocentesis usually performed?
A : at 6-8 weeks
B : at 9-12 weeks
C : at 14-16 weeks
D : at 20-23 weeks

Correct Answer : C

139 : You are 9 weeks pregnant and are concerned your baby may have a genetic defect. What medical procedure will most likely be recommended?
A : fetoscopy
B : ultrasound
C : amniocentesis
D : chorionic villus sampling

Correct Answer : D

140 : What does CVS stand for?
A : cervical villus sampling
B : cervical variability study
C : chorionic villus sampling
D : chorionic variability sampling

Correct Answer : C

141 : Your pregnant niece is scheduled for an amniocentesis, but she is confused by all the prenatal tests she has read about. What do you tell her about the process of amniocentesis?
A : It has not been used as frequently as CVS because amniocentesis carries a slightly greater risk of spontaneous abortion.
B : It is carried out later in a pregnancy than a CVS.
C : It involves a procedure that inserts a small syringe through the vagina.
D : It involves the examination of villi from the membrane that envelops the amniotic sac and fetus.

Correct Answer : B

142 : How does an ultrasound work?
A : It allows the human ear to hear the fetus.

B : It yields a picture called a "cat-scan."
C : It bounces sound waves off the fetus.
D : It uses X-ray photography to take a picture of the unborn child.

Correct Answer : C

143 : What technique generates a picture of the fetus?
A : a fetoscopy
B : an ultrasound
C : an amniocentesis
D : a chorionic villus sampling

Correct Answer : B

144 : What can an ultrasound detect?
A : PKU
B : cystic fibrosis
C : Klinefelter syndrome
D : the position of the fetus

Correct Answer : D

145 : What is used to detect neural tube defects such as spina bifida?
A : an ultrasound
B : an Rh disease test
C : genetic counselling
D : an alpha-fetoprotein (AFP) assay

Correct Answer : D

146 : Which procedure poses the least risk to the fetus?
A : an ultrasound
B : an amniocentesis
C : an alpha-fetoprotein assay
D : chorionic villus sampling

Correct Answer : C

147 : What is the purpose of the alpha-fetoprotein assay?
A : to detect neural tube defects
B : to measure enzyme levels in the fetus
C : to assess sex chromosome abnormalities
D : to assess the degree of cognitive delay

Correct Answer : A

148 : What would you tell a woman who is concerned about the risks of fetal testing?
A : No risk is associated with fetal testing.
B : Because of the risks, fetal testing should not be done.
C : The risk in fetal testing is to the mother, not the fetus.
D : Although fetal testing has some risk, it is sometimes considered necessary.

Correct Answer : D

149 : What term refers to the set of traits we inherit from our parents?
A : genotype
B : personality
C : phenotype
D : temperament

Correct Answer : A

150 : What term refers to our actual set of characteristics or traits?
A : genotype
B : personality
C : phenotype
D : temperament

Correct Answer : C

151 : Which of the following is most influenced by environment?
A : genes
B : genotype
C : phenotype
D : chromosomes

Correct Answer : C

152 : Which genes do parents share with their children and their siblings?
A : dominant genes only
B : recessive genes only
C : approximately 25% of their genetic material
D : approximately 50% of their genetic material

Correct Answer : D

153 : Which of the following is a defining characteristic of monozygotic twins?
A : They share 50% of their genetic material.
B : They are as different as non-twin siblings.
C : They will look very similar in physical appearance.
D : They are formed from two eggs but are fertilized by the same sperm.

Correct Answer : C

154 : Some twin pairs look more like each other than other twin pairs. Which twin pairs resemble each other the most?
A : monozygotic twin pairs
B : dizygotic twin pairs of either sex
C : dizygotic twin pairs who are males
D : monozygotic twin pairs who are female

Correct Answer : A

155 : Researchers have studied and compared the similarities between monozygotic and dizygotic twins. According to your textbook, a similarity in which characteristic shared by monozygotic twins appears to be linked more to genetics than to environment?

A : measures of strength
B : intelligence
C : weight
D : number of children they conceive

Correct Answer : B

156 : Approximately how many live births in Canada are multiple births?
A : 1 in 30
B : 1 in 20
C : 1 in 10
D : 1 in 2

Correct Answer : A

157 : Which group shares the most similar genetic material?
A : dizygotic twins
B : grandmothers
C : cousins
D : monozygotic twins

Correct Answer : D

158 : What is the general finding of studies on monozygotic twins reared in separate environments?
A : They are identical in genetics, behaviours, and preferences.
B : They are less alike, genetically, than dizygotic twins reared together.
C : They are no more alike in genetics, behaviours, and preferences than non-twin siblings.
D : They share the same degree of genetic similarity as monozygotic twins reared together.

Correct Answer : D

159 : Jeffrey, who is an adopted child, has some characteristics that are more similar to his natural parents than to his adoptive parents. What is the most appropriate conclusion?
A : The adoptive parents have not included him in their family cultural activities.
B : Heredity plays a diminished role in the formation of personality.
C : Environment influences who we are and who we become.
D : Genetics play a role in the development of certain human characteristics.

Correct Answer : D

160 : How many ova does a human female have at birth?
A : zero; ova develop during puberty
B : between 50,000 and 100,000 ova
C : approximately 400,000 ova
D : millions of ova

Correct Answer : C

161 : What occurs during menstruation?
A : An unfertilized egg is discharged.
B : The fertilized egg undergoes mitosis.
C : The fertilized egg undergoes meiosis.

D : The fertilized egg attaches to the uterus.

Correct Answer : A

162 : Which statement best describes the sperm cell before meiosis?
A : It contains 46 chromosomes.
B : It contains two X chromosomes.
C : It is significantly larger than the egg cell.
D : It is more likely to conceive a girl than a boy.

Correct Answer : A

163 : Which of the following is a defining characteristic of the sperm cell?
A : It contains two Y chromosomes.
B : It is significantly larger than the egg cell.
C : It is one of the smallest types of cells in the body.
D : It does not determine the gender of the developing child.

Correct Answer : C

164 : Which statement distinguishes the conception of males from the conception of females?
A : More males are conceived and more survive to birth.
B : Fewer males are conceived, but more survive to birth.
C : Fewer males are conceived and more are spontaneously aborted.
D : More males are conceived and more are spontaneously aborted.

Correct Answer : D

165 : Approximately how many sperm cells are contained in a single ejaculate?
A : 50 million
B : 100 million
C : 150 million
D : 300 million

Correct Answer : C

166 : Only 1 in 1,000 sperm will arrive in the vicinity of an ovum. Which of the following factors may prevent sperm cells from travelling the entire distance to the egg?
A : the woman’s age
B : menstruation
C : length of time since last ovulation
D : gravity

Correct Answer : D

167 : After ejaculation, how long does it take sperm to reach the fallopian tubes?
A : 60 to 90 seconds
B : 5 to 15 minutes
C : 20 to 30 minutes
D : 60 to 90 minutes

Correct Answer : D

168 : The term “infertile” refers to a couple who have been unsuccessful at conceiving. What criterion must be met before this term is used?
A : one year of failed attempts
B : four years of failed attempts
C : four failed attempts to get pregnant
D : two miscarriages in the fourth month of pregnancy

Correct Answer : A

169 : In Canada what percentage of infertility cases can be traced to the man?
A : 10
B : 20
C : 30
D : 40

Correct Answer : D

170 : What can cause infertility problems in men?
A : use of drugs
B : lack of exercise
C : excessive masturbation
D : excess protein in the diet

Correct Answer : A

171 : What term refers to the sperm's ability to move?
A : infection
B : propulsion
C : evolution
D : motility

Correct Answer : D

172 : Which of the following may cause infertility in women?
A : tattoos
B : lack of physical exercise
C : stress
D : motility

Correct Answer : C

173 : What is the most common fertility problem in women?
A : PID
B : endometriosis
C : irregular ovulation or lack of ovulation
D : barriers to the passageways through which the ovum must pass

Correct Answer : C

174 : In which process is sperm injected into the uterus at the time of ovulation?
A : IVF
B : artificial insemination
C : donor IVF

D : pergonal

Correct Answer : B

175 : A Canadian couple want to have a child as soon as possible. What are their chances of having difficulties conceiving?
A : 1 in 100
B : 1 in 50
C : 1 in 20
D : 1 in 6

Correct Answer : D

176 : Ova are sometimes fertilized in vitro, tested for sex chromosomal structure, and then the embryos of the desired sex are implanted into the mother-to-be. What term refers to this process?
A : PID
B : IVF
C : PGD
D : OIV

Correct Answer : C

177 : Ben and Natalie are having difficulty conceiving, although both have children from previous relationships. What does the textbook tells us about the cause of infertility being a male or female problem?
A : It is predominately a woman’s problem.
B : It is predominately a man’s problem.
C : The problem lies with the man about 40% of the time.
D : The problem lies with the woman about 80% of the time.

Correct Answer : C

178 : What is the correct order of the three prenatal stages?
A : embryonic, fetal, meiotic
B : meiotic, embryonic, fetal
C : germinal, fetal, embryonic
D : germinal, embryonic, fetal

Correct Answer : D

179 : In one stage of prenatal development, conception occurs, the zygote divides, and then implantation in the uterine wall occurs. What term describes this stage?
A : the fetal stage
B : the mitotic stage
C : the germinal stage
D : the embryonic stage

Correct Answer : C

180 : What is the fluid-filled ball of cells that develops during the germinal stage of pregnancy?
A : the fetus
B : the germin

C : the umbilicus
D : the blastocyst

Correct Answer : D

181 : Which statement best describes a miscarriage?
A : It rarely occurs during the first trimester of pregnancy.
B : It occurs in approximately one-third of all pregnancies.
C : It occurs as a result of menstrual flow that occurs too late after ovulation.
D : It is common when women who are pregnant bleed during implantation of the blastocyst into the uterine wall.

Correct Answer : B

182 : Mona is told during her prenatal medical appointment that the major organ systems have differentiated. What is this developmental stage called?
A : the fetal stage
B : the germinal stage
C : the embryonic stage
D : the blastocystic stage

Correct Answer : C

183 : What develops from the neural tube during the prenatal period of development?
A : the digestive system
B : the muscular system
C : the arm buds and leg buds
D : the central nervous system

Correct Answer : D

184 : When does the onset of sexual differentiation occur?
A : during the germinal period
B : during the embryonic period
C : when the X chromosome is present
D : when secondary sex characteristics are present

Correct Answer : B

185 : What is the purpose of the amniotic sac?
A : It develops into the umbilical cord.
B : It contains fluid to allow the embryo and fetus to move around.
C : It protects the developing organism from harmful toxins.
D : It permits the exchange of nutrients and waste with the mother.

Correct Answer : B

186 : Which of the following is a defining characteristic of the placenta?
A : It develops from only the mother’s tissue.
B : It is reused for each of a woman’s pregnancies.
C : It acts as an impermeable barrier that protects the developing fetus from toxins.
D : It acts as a filter that permits oxygen and nutrients from the mother to reach the embryo.

Correct Answer : D

187 : During which stage of prenatal development does the developing organism gain the most weight and length?
A : the fetal stage
B : the germinal stage
C : the embryonic stage
D : the diaphragmatic stage

Correct Answer : A

188 : What has research concluded after studying fetuses and their perception of sound during the third trimester?
A : Fetuses are unresponsive to outside stimuli.
B : Fetuses respond to visual stimuli only.
C : Fetuses respond to rate of speech and prefer faster speakers to slower ones.
D : Fetuses can learn to recognize the sounds of books being read to them.

Correct Answer : D

189 : Which statement best describes the effects of nutrition during pregnancy?
A : Maternal malnutrition has been linked to low birth weight and cardiovascular disease.
B : The effects of fetal malnutrition cannot be overcome after birth.
C : Pregnant women can eat and drink whatever they want because their fetuses are not affected by what their mothers consume.
D : Fetal overnutrition is more of a problem than fetal malnutrition.

Correct Answer : A

190 : Which woman has the highest likelihood of having a preterm birth?
A : Janisha, who is 16 years old
B : Jill, who is 20 years old
C : Tonya, who is 27 years old
D : Brenda, who is 38 years old

Correct Answer : A

191 : A first-time expectant mother is confused about what teratogens are and the risks they pose during her pregnancy. Which of the following would you tell her?
A : They are only those substances the mother’s body produces.
B : They harm the fetus only when taken in extremely large doses.
C : They are most damaging during the fetal period of development.
D : They are environmental agents that can harm the embryo or fetus.

Correct Answer : D

192 : A pregnant friend is concerned that she may have been exposed to harmful pesticides. Which statement reflects what you would tell her?
A : She should relax because pesticide exposure will not harm an embryo or fetus.
B : The amount of the substance and the time during the pregnancy when she was exposed will determine the impact.
C : There is a very good chance that her baby will be physically and cognitively impacted by the exposure.
D : Pesticides are most harmful just before birth.

Correct Answer : B

193 : How is HIV/AIDS transmitted in pregnant women?
A : It is always transmitted from the pregnant woman to the unborn child.
B : It is usually transmitted during pregnancy from the mother to unborn child.
C : It is caused by casual contact between the pregnant woman and someone with the disease.
D : It is transmitted through breast milk or during a vaginal delivery more frequently than during pregnancy.

Correct Answer : D

194 : Which statement characterizes the relationship between pregnancy and rubella?
A : If a woman is infected within the first 20 weeks of pregnancy, she is at lower risk than if she were infected later.
B : If a woman is infected within the first 20 weeks of pregnancy, the newborn may have birth defects.
C : Women who had rubella as children are at an increased risk of being infected during pregnancy.
D : Rubella during pregnancy is relatively harmless to the mother and child.

Correct Answer : B

195 : Which of the following is a characteristic of toxemia?
A : It has clear causal factors.
B : It sometimes causes maternal death.
C : It is a problem for only the unborn child.
D : It usually causes babies to be born extremely overweight.

Correct Answer : B

196 : Which statement is helpful in understanding the nature of Rh incompatibility?
A : It is worse for a woman who is having her first pregnancy.
B : It is a disorder that can be treated through surgery when the fetus is in the uterus.
C : It is a problem that inflicts approximately 90% of Canadian couples.
D : It causes a mother’s body to produce antibodies that attack the fetus and can lead to brain damage or death.

Correct Answer : D

197 : Which term refers to the environmental factors that contribute to birth defects?
A : stressors
B : teratogens
C : genetic inhibitors
D : toxins

Correct Answer : B

198 : What substance was once used to treat insomnia and nausea but caused major birth defects?
A : DES
B : hormones
C : antibiotics
D : thalidomide

Correct Answer : D

199 : What would you tell your girlfriend who is wondering about taking vitamins during her

pregnancy?
A : They rarely cause damage to a developing fetus.
B : They are as dangerous as heroin and methadone.
C : They should be taken in the dosage directed by a doctor.
D : They are most effective when taken in higher dosages than are used when one is not pregnant.

Correct Answer : C

200 : What has research found regarding marijuana use during pregnancy?
A : Infants incur learning problems, but no physical problems.
B : Infants incur significant long-term physical deficits.
C : Addiction to marijuana as an adult is increased in an embryo or fetus exposed to marijuana in utero.
D : Because this substance is rarely used, research results are limited.

Correct Answer : C

201 : What is the current thinking regarding alcohol consumption during pregnancy?
A : It is safe after the end of the second trimester.
B : It should be encouraged because it relaxes the mother.
C : It may lead to cognitive deficits and physical malformations.
D : It is safe as long as fewer than two drinks are consumed per day.

Correct Answer : C

202 : What does research state regarding the effects of caffeine consumption during pregnancy?
A : It is difficult to measure the presence of caffeine in the bloodstream.
B : It is inconclusive in terms of caffeine’s neurological effects.
C : Caffeine has the same effect as cocaine on the developing fetus.
D : Such research is limited because many women abstain from caffeine use while pregnant.

Correct Answer : B

203 : What is the effect of cigarette smoking during pregnancy?
A : It has no long-term adverse effects.
B : It is harmful only if the mother is not taking prenatal vitamins.
C : It is associated with low birth weight and increased risk of stillbirth and infant mortality.
D : It is only a problem if the woman smokes; second-hand smoke holds no risk for the developing fetus.

Correct Answer : C

204 : What would you tell a woman who is worried about exposure to environmental hazards during her pregnancy?
A : Environmental hazards include ultrasound and X-rays.
B : Environmental hazards include lead, mercury, PCBs, and radiation.
C : Environmental hazards lead to severe cognitive disabilities, but rarely physical deformations.
D : Environmental hazards are only a problem if the pregnant woman was exposed during the embryonic period of development.

Correct Answer : B

205 : What is the relationship between parents’ age and successful childbearing?
A : Parents’ age is unrelated to childbearing success.

B : The optimal time for childbearing is during the teenage years.
C : An optimal time for childbearing may exist for both mothers and fathers.
D : Women in their 20s are at greater risk for miscarriage and inadequate prenatal care than teenaged and older mothers.

Correct Answer : C

MATCHING

206 :

A : XY sex chromosomes
B : Monozygotic
C : Sickle-cell anemia
D : Meiosis
E : Phenotype
F : Homozygous
G : Hemophilia
H : Down’s syndrome
I : Huntington disease
J : Intelligence
K : Dizygotic
L : Mitosis
M : Genotype

N : Heterozygous

O : Testosterone
P : Gender of child
Q : XX sex chromosomes
R : Estrogen
S : Conception
T : Congenital

A : sex-linked genetic abnormality
B : both alleles for a trait are the same
C : cell division that results in identical cells
D : the genetic material received from parents
E : caused by a recessive gene
F : polygenically determined
G : male hormone
H : genetically male
I : twins produced from a single egg
J : cell division that results in non-identical cells
K : union of an ovum and a sperm cell
L : female hormone
M : associated with the 21st pair of chromosomes
N : how genetic material manifests itself in characteristics
O : twins produced from two eggs
P : present at birth
Q : determined by father
R : both alleles for a trait differ
S : caused by a dominant gene
T : genetically femaleQUESTION TYPE: MatchingCUSTOM ID: 02-206

Correct Answer :
A : E

B : I

C : E

D : J

E : A13

F : B

G : A

H : A12

I : A18

J : F

K : A14

L : C

M : D

N : A17

O : G

P : A16

Q : A19

R : A11

S : K

T : A15