HDEV 5th edition Rathus Test Bank

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TRUE/FALSE

1 : Sebaceous glands cause a developing organism to grow arms or wings, skin or scales.
A : true
B : false

Correct Answer : B

2 : Typical human cells contain 50 chromosomes organized into 25 pairs.
A : true
B : false

Correct Answer : B

3 : Meiosis is responsible for the production of sperm and ova.
A : true
B : false

Correct Answer : A

4 : Monozygotic (MZ) twins are known as fraternal twins.
A : true
B : false

Correct Answer : B

5 : Dizygotic (DZ) twins run in families.
A : true
B : false

Correct Answer : A

6 : As women reach the end of their childbearing years, ovulation becomes more regular.
A : true
B : false

Correct Answer : B

7 : The probability of having a child with Downs syndrome increases with the age of the parents.
A : true
B : false

Correct Answer : A

8 : Duchenne muscular dystrophy is a sex-linked abnormality.
A : true
B : false

Correct Answer : A

9 : Color blindness is a sex-linked abnormality.
A : true

B : false

Correct Answer : A

10 : Amniocentesis is a procedure used in abortion.
A : true
B : false

Correct Answer : B

11 : Neural tube defects cause an elevation in the alpha-fetoprotein (AFP) level in the mothers blood.
A : true
B : false

Correct Answer : A

12 : The actual sets of traits that people exhibit are called their genotypes.
A : true
B : false

Correct Answer : B

13 : Genotypes reflect both genetic and environmental influences.
A : true
B : false

Correct Answer : B

14 : Sperm are much larger than ova.
A : true
B : false

Correct Answer : B

15 : A low sperm count, or lack of sperm, is the most common infertility problem in men.
A : true
B : false

Correct Answer : A

16 : A blastocyst gains mass only when it receives nourishment from outside.
A : true
B : false

Correct Answer : A

17 : The fetus begins to turn and respond to external stimulation at about the second or third week.
A : true
B : false

Correct Answer : B

18 : The mother usually feels the first fetal movements during the first month of pregnancy.
A : true
B : false

Correct Answer : B

19 : Rh incompatibility occurs when an Rh-positive woman is carrying an Rh-negative fetus.
A : true
B : false

Correct Answer : B

20 : Babies with fetal alcohol syndrome (FAS) are often larger than normal, and so are their brains.
A : true
B : false

Correct Answer : B

MULTIPLE CHOICE

21 : The field of biology that studies heredity is called:
A : etiology.
B : ecology.
C : genetics.
D : eugenics.

Correct Answer : C

22 : Chromosomes are _____ structures found in cells.
A : rod-shaped
B : circular
C : cone-shaped
D : octagonal

Correct Answer : A

23 : Chromosomes contain thousands of segments called:
A : nuclei.
B : nodes.
C : capillaries.
D : genes.

Correct Answer : D

24 : Which of the following most accurately describes the function of genes?
A : They regulate the development of traits.
B : They prevent foreign particles from entering the body.
C : They work together with lutein to influence development.
D : They transfer oxygen from the bloodstream to other parts of the body.

Correct Answer : A

25 : Polygenic traits are those that are:
A : developed during adolescence.
B : transmitted by the mother.
C : uncommon in humans.
D : determined by several pairs of genes.

Correct Answer : D

26 : Deoxyribonucleic acid (DNA) takes the form of a:
A : single spiral.
B : double helix.
C : sphere.
D : cube.

Correct Answer : B

27 : Which of the following pairs of bases is present in the rungs of the ladder-like structure of deoxyribonucleic acid (DNA)?
A : Cytosine with guanine
B : Rhodamine with biotin
C : Diaminopurine with ribozyme
D : Serine with tyrosine

Correct Answer : A

28 : Humans begin life as a single cell that divides repeatedly. This cell is known as a(n):
A : zygote.
B : gonadotrope.
C : embryo.
D : chromaffin.

Correct Answer : A

29 : In the structure of deoxyribonucleic acid (DNA), which of the following bases combines with thymine?
A : Cytosine
B : Adenine
C : Rhodamine
D : Serine

Correct Answer : B

30 : Which of the following processes happen during mitosis?
A : Strands of deoxyribonucleic acid (DNA) break apart.
B : Adenine combines with its appropriate partner, cytosine.
C : Sperm and ova cells are created.
D : Twenty-three chromosomes are created.

Correct Answer : A

31 : Which of the following statements is true of mutations?
A : Mutations can only occur by chance.
B : Mutations produce sperm and ova cells.
C : Mutations occur through radiation or other environmental influences.
D : Mutations help adenine combine with guanine to form the single spiral structure of deoxyribonucleic acid (DNA).

Correct Answer : C

32 : After meiosis, each new cell nucleus contains _____ chromosomes.
A : 46
B : 35
C : 23
D : 12

Correct Answer : C

33 : A human zygote contains _____ pairs of autosomes.
A : 46
B : 44
C : 23
D : 22

Correct Answer : D

34 : The determination of a childs sex depends on the:
A : presence of teratogens at the time of conception.
B : sex chromosome received from the mother.
C : presence of teratogens at the time of ovulation.
D : sex chromosome received from the father.

Correct Answer : D

35 : The typical sex chromosome pattern for males is _____.
A : XX
B : XYY
C : XY
D : XXY

Correct Answer : C

36 : The typical sex chromosome pattern for females is _____.
A : XX
B : XYY
C : XY
D : XXY

Correct Answer : A

37 : Twins that derive from a single zygote that has split into two are called:
A : monozygotic (MZ) twins.
B : non-identical twins.
C : fraternal twins.

D : dizygotic (DZ) twins.

Correct Answer : A

38 : According to a study in the year 2013 by Fellman, if a woman is a twin, if her mother was a twin, or if she has previously borne twins, then:
A : she will bear only monozygotic (MZ) twins.
B : the chances of her becoming pregnant decrease.
C : she is likely to be a healthy mother.
D : the chances rise that she will bear twins.

Correct Answer : D

39 : According to a study in the year 2013 by Fellman, the chances of twins:
A : increase when a woman conceives before she is 21.
B : increase with parental age.
C : decrease with the number of times couples have sex before conception.
D : decrease with the use of fertility drugs.

Correct Answer : B

40 : According to a study in the year 2013 by Fellman, which of the following statements is true of fertility drugs?
A : They enhance the chances of multiple births.
B : They stop ova from ripening.
C : They should be taken orally and not injected.
D : They suppress the process of hormone secretion.

Correct Answer : A

41 : Each member of a pair of genes is termed a(n) _____.
A : allele
B : zygote
C : autosome
D : node

Correct Answer : A

42 : When both of the alleles for a trait, such as hair color, are the same, the person is said to be _____ for that trait.
A : monozygotic
B : dizygotic
C : homozygous
D : hemizygous

Correct Answer : C

43 : When the effects of both alleles are shown, there is said to be:
A : codominance.
B : preponderance.
C : ascendance.
D : concurrence.

Correct Answer : A

44 : If an individual gets a recessive gene for eye color from both parents, the:
A : gender of the child will determine if that trait is shown.
B : recessive trait will develop in the child.
C : recessive trait will develop 50% of the time.
D : recessive trait will be suppressed, and the dominant trait will be expressed.

Correct Answer : B

45 : Jill bears the genetic code for Von Willebrand disease, but she has never developed the illness herself. Jill would be considered:
A : a carrier of the recessive gene that causes the disease.
B : susceptible to the disease after adolescence.
C : an acceptor of the recessive gene that causes the disease.
D : susceptible to the disease at late adulthood.

Correct Answer : A

46 : Which of the following statements is considered a multifactorial problem?
A : Cystic fibrosis
B : Downs syndrome
C : Diabetes mellitus
D : XYY syndrome

Correct Answer : C

47 : Downs syndrome is caused by:
A : alcohol abuse by the mother at the time of conception.
B : sex-linked chromosomal abnormalities.
C : an extra chromosome on the 21st pair.
D : drug abuse by the mother during pregnancy.

Correct Answer : C

48 : Which of the following statements is true of Downs syndrome?
A : Downs syndrome is usually caused by a defect in the sex chromosomes of an individual.
B : The symptoms of Downs syndrome are similar to those of sickle-cell anemia.
C : Downs syndrome is caused by a sexually transmitted infection (STI) during conception.
D : The probability of having a child with Downs syndrome increases with the age of the parents.

Correct Answer : D

49 : According to a study in 2013 by van Gameren-Oosterom, individuals with Downs syndrome:
A : are unlikely to die from cardiovascular problems by middle age.
B : have no specific characteristic features.
C : show deficits in cognitive development.
D : are likely to have only 46 chromosomes.

Correct Answer : C

50 : Which of the following statements is a characteristic of supermales?

A : They are somewhat taller than average.
B : Their facial hair growth is minimal when compared to normal males.
C : They suffer from gynecomastia.
D : They are typically impotent.

Correct Answer : A

51 : Twenty-year-old Jack is extremely tall and has very thick facial hair. Most of his male secondary sex characteristics are also more pronounced than men of his age. In this scenario, Jack is most likely:
A : an XYY male.
B : to be diagnosed with Klinefelter syndrome.
C : an XXY male.
D : to be diagnosed with Downs syndrome.

Correct Answer : A

52 : According to a study in 2014 by Skakkebaek et al., who among the following is most likely to have gynecomastia?
A : Jennifer, a dancer, who has Downs syndrome
B : Frank, a teacher, who is diagnosed with XYY syndrome
C : Peter, a fashion designer, who has Klinefelter syndrome
D : Ria, a gym instructor, who is diagnosed with Turner syndrome

Correct Answer : C

53 : Individuals with Klinefelter syndrome produce:
A : less estrogen than normal males.
B : less testosterone than normal males.
C : less adenine than normal males.
D : less thymine than normal males.

Correct Answer : B

54 : Rico is a man who has enlarged breasts and suffers from mild mental retardation. He has a problem learning languages, and his body produces less of the male sex hormone testosterone than normal males. Rico is most likely suffering from:
A : Klinefelter syndrome.
B : Tay-Sachs disease.
C : Turner syndrome.
D : Downs syndrome.

Correct Answer : A

55 : Tim, a 27-year-old man, has unusually narrow shoulders, low muscle mass, and has no facial and body hair. His doctor recently prescribed testosterone replacement therapy to him. Tim is most likely suffering from:
A : phenylketonuria (PKU).
B : cystic fibrosis.
C : Klinefelter syndrome.
D : Huntingtons disease (HD).

Correct Answer : C

56 : Girls with Turner syndrome:
A : possess more thymine than cytosine.
B : are taller than average.
C : produce little estrogen.
D : are more likely to give birth to twins.

Correct Answer : C

57 : Daisy was always unusually short for her age. She was unable to conceive a child after marriage, and upon visiting a doctor, she was prescribed estrogen replacement therapy. Daisy is most likely suffering from:
A : phenylketonuria (PKU).
B : cystic fibrosis.
C : Turner syndrome.
D : Huntingtons disease (HD).

Correct Answer : C

58 : Matt is a 36-year-old male. In the past year, he has noticed that his limbs sometimes move on their own, and he has also started having trouble remembering things and doing simple calculations. Matts father and grandfather were also known to have similar problems during their adulthood. Matt is most likely suffering from:
A : phenylketonuria (PKU).
B : cystic fibrosis.
C : Turner syndrome.
D : Huntingtons disease (HD).

Correct Answer : D

59 : Sickle-cell anemia is caused by:
A : a chromosomal abnormality.
B : a single segment found only on the Y chromosome.
C : a recessive gene.
D : a decrease in estrogen levels.

Correct Answer : C

60 : Which of the following statements is true of sickle-cell anemia?
A : It is typically treated with testosterone replacement therapy.
B : Children with this problem cannot metabolize an amino acid called phenylalanine.
C : It leads to the obstruction of small blood vessels and decreased oxygen supply.
D : Girls with this problem are shorter than average and infertile.

Correct Answer : C

61 : Which of the following is most likely to develop sickle cell anemia?
A : European American.
B : Native American.
C : African American.
D : Asian American.

Correct Answer : C

62 : Which of the following illnesses causes a degeneration of the central nervous system?
A : Tay-Sachs disease
B : Cystic fibrosis
C : Turner syndrome
D : Klinefelter syndrome

Correct Answer : A

63 : Which of the following statements is true about Tay-Sachs disease?
A : it is most commonly found among children in Jewish families of Eastern European background.
B : Children who have this disease suffer from excessive production of mucus in the lungs and pancreas.
C : It is most commonly found among children in Asian American families.
D : Children who have this disease suffer from muscular dystrophy characterized by a weakening of the muscles.

Correct Answer : A

64 : Cystic fibrosis is caused by a(n):
A : sex-linked abnormality.
B : abnormality in the 21st pair of chromosomes.
C : recessive gene.
D : single segment found only on the Y chromosome.

Correct Answer : C

65 : Which of the following statements is a symptom of cystic fibrosis in children?
A : Cystic fibrosis leads to uncontrollable muscle movements and personality change.
B : Cystic fibrosis leads to the excessive production of thick mucus that clogs the pancreas and lungs.
C : Cystic fibrosis causes red blood cells to clump together, obstructing small blood vessels and decreasing the oxygen supply.
D : Cystic fibrosis causes the central nervous system to degenerate, resulting in death.

Correct Answer : B

66 : Most victims of _____ die of respiratory infections in their 20s.
A : Tay-Sachs disease
B : cystic fibrosis
C : Turner syndrome
D : Klinefelter syndrome

Correct Answer : B

67 : Which of the following statements is a symptom of cystic fibrosis in children?
A : They suffer from a genetic disorder that decreases the bloods capacity to carry oxegen.
B : They suffer from excessive production of thick mucus that clogs the pancreas and lungs.
C : They suffer from a loss of intellectual functioning and personality change.
D : They produce less of the male sex hormone testosterone than normal children.

Correct Answer : B

68 : A(n) _____ is a procedure for using ultrasonic sound waves to create a picture of an embryo or fetus.
A : phenotype
B : sonogram
C : genotype
D : alpha-fetoprotein (AFP) assay

Correct Answer : B

69 : _____ is used to detect neural tube defects such as spina bifida and certain chromosomal abnormalities.
A : Artificial insemination
B : Amniocentesis
C : Endometriosis
D : Alpha-fetoprotein (AFP) assay

Correct Answer : D

70 : An individuals _____ reflects both genetic and environmental influences.
A : phenotype
B : chromosome
C : allele
D : genotype

Correct Answer : A

71 : Who among the following share 100% of their genes?
A : Biovular twins
B : Fraternal twins
C : Dizygotic (DZ) twins
D : Monozygotic (MZ) twins

Correct Answer : D

72 : When children who are reared by adoptive parents are nonetheless more similar to their natural parents in a trait, it can be concluded that:
A : the genetic characteristics of the children change over time.
B : heredity is solely responsible for how a child grows.
C : the environment is solely responsible in the development of those characteristics.
D : genetics play a role in the development of those characteristics.

Correct Answer : D

73 : According to a survey by Adhikari and Liu in the year 2013, at birth, women have:
A : close to 100,000 ova.
B : around 300,000 to 400,000 ova.
C : around 100 to 200 ova.
D : only 500 ova.

Correct Answer : B

74 : Which of the following statements is true of menstruation?

A : During this time, the endometrium is not discharged.
B : During this time, an unfertilized egg is discharged.
C : During this time, a female cannot have sex with her partner.
D : During this time, a fertilized egg undergoes mitosis.

Correct Answer : B

75 : Before meiosis, a sperm cell:
A : contains 46 chromosomes.
B : contains two X chromosomes.
C : is significantly larger than an egg cell.
D : contains both an X and a Y chromosome.

Correct Answer : A

76 : Which of the following statements is true of a sperm cell?
A : A sperm cell is significantly larger than an egg cell.
B : A sperm cell contains two Y chromosomes.
C : A sperm cell travels randomly inside a womans reproductive tract.
D : A sperm cell is one of the smallest types of cells in the body.

Correct Answer : D

77 : In the context of an average ejaculation, which of the following statements is true about sperm?
A : The average count of sperm in the ejaculate is 2.5 billion.
B : Sperm in the ejaculate find the ovum by following the current of the fluid coming from the cervix.
C : Only 1 in 1,000 sperm in the ejaculate will ever approach an ovum.
D : Most of the sperm in the ejaculate move about in a random pattern in the vagina.

Correct Answer : C

78 : Once the testes have developed in the embryo, they begin to produce male sex hormones, or _____.
A : androgens
B : genotypes
C : blastocysts
D : teratogens

Correct Answer : A

79 : The _____ is the inner layer of the embryo from which the lungs and digestive system develop.
A : neural tube
B : mesoderm
C : endoderm
D : umbilical cord

Correct Answer : C

80 : The _____ is the central layer of the embryo from which the bones and muscles develop.
A : neural tube

B : mesoderm
C : ectoderm
D : umbilical cord

Correct Answer : B

81 : _____ are environmental agents that can harm the embryo or fetus.
A : Mutations
B : Autosomes
C : Teratogens
D : Androgens

Correct Answer : C

82 : Which of the following happens in the critical period that occurs in the fourth through eighth weeks of a pregnancy?
A : The development of the lungs
B : The development of the heart
C : The development of arms and legs
D : The development of the stomach

Correct Answer : C

83 : _____ is a synthetic hormone used to prevent miscarriages that can cause masculinization of the fetus.
A : Testosterone
B : Estrogen
C : Progestin
D : Oxytocin

Correct Answer : C

84 : _____ was a drug marketed in the 1960s to pregnant women that caused birth defects such as missing or stunted limbs in infants.
A : Progestin
B : Estrogen
C : Thalidomide
D : Oxytocin

Correct Answer : C

85 : _____ is a type of estrogen, prescribed in the 1940s and 1950s to pregnant women, that is said to have caused testicular, vaginal, and cervical cancer in some offspring.
A : Androsterone
B : Adiponectin
C : Progestin
D : Diethylstilbestrol

Correct Answer : D

86 : _____ is a sexually transmitted infection that, in advanced stages, can attack major organ systems.
A : Rubella

B : Syphilis
C : Cystic fibrosis
D : Phenylketonuria

Correct Answer : B

87 : _____, also called German measles, is a viral infection passed on from the mother to the fetus that can cause birth defects such as deafness, intellectual disabilities, blindness, and heart disease in the embryo.
A : Rubella
B : Syphilis
C : Cystic fibrosis
D : Phenylketonuria

Correct Answer : A

88 : _____ is a life-threatening disease, characterized by high blood pressure that may afflict women late in the second or early in the third trimester.
A : Rubella
B : Syphilis
C : Preeclampsia
D : Phenylketonuria

Correct Answer : C

89 : Which of the following statements about Rh incompatibility is true?
A : Rh incompatibility occurs most commonly during a womans first pregnancy.
B : Rh incompatibility is an untreatable condition that leaves a woman infertile for the rest of her life.
C : Rh incompatibility is an abnormality that is transmitted from generation to generation and carried by a sex chromosome.
D : Rh incompatibility occurs due to antibodies transmitted to a fetus during subsequent deliveries causing brain damage or death.

Correct Answer : D

90 : Thalidomide was marketed in the 1960s as a treatment for:
A : insomnia and nausea.
B : infertility and impotency.
C : Downs syndrome.
D : Turner Syndrome.

Correct Answer : A

91 : _____ is the process in which the double helix of deoxyribonucleic acid (DNA) duplicates.
A : Amniocentesis
B : Mitosis
C : Meiosis
D : Mutation

Correct Answer : B

92 : After mitosis, the genetic code is identical in new cells unless _____ occur through radiation or other environmental influences.
A : reductions
B : expulsions
C : conceptions
D : mutations

Correct Answer : D

93 : _____ are problems that stem from the interaction of heredity and environmental factors.
A : Multifactorial problems
B : Cognitive problems
C : Horizon problems
D : Coronal problems

Correct Answer : A

94 : _____ is a fatal genetic neurologic disorder whose onset is in middle age.
A : Tay-Sachs disease
B : Duchenne muscular dystrophy
C : Hemophilia
D : Huntingtons disease

Correct Answer : D

95 : _____ is a genetic disorder in which blood does not clot properly.
A : Cystic fibrosis
B : Hemophilia
C : Lymphoma
D : Huntingtons disease

Correct Answer : B

96 : The _____ is the hollow organ within females in which the embryo and fetus develop.
A : placenta
B : ovum
C : uterus
D : amniotic sac

Correct Answer : C

97 : Monozygotic (MZ) twins share _____ percent of their genes.
A : 100
B : 75
C : 50
D : 25

Correct Answer : A

98 : Dizygotic (DZ) twins share _____ percent of their genes.
A : 100
B : 75

C : 50
D : 25

Correct Answer : C

99 : _____ is self-propulsion.
A : Mitosis
B : Meiosis
C : Motility
D : Mutation

Correct Answer : C

100 : The embryo and fetus develop within a protective_____ in the uterus.
A : amniotic sac
B : umbilical cord
C : neural tube
D : embryonic disk

Correct Answer : A

ESSAY

101 : Distinguish between monozygotic (MZ) twins and dizygotic (DZ) twins.

Correct Answer : Now and then, a zygote divides into two cells that separate so that each develops into an individual with the same genetic makeup. These individuals are identical twins, or monozygotic (MZ) twins. If the woman produces two ova in the same month and they are each fertilized by different sperm cells, they develop into fraternal twins, or dizygotic (DZ) twins. DZ twins run in families. If a woman is a twin, if her mother was a twin, or if she has previously borne twins, the chances rise that she will bear twins.

102 : Describe the symptoms and conditions of a child with Downs syndrome.

Correct Answer : Answers will vary. Down's syndrome is usually caused by an extra chromosome on the 21st pair, resulting in 47 chromosomes. The probability of having a child with Down's syndrome increases with the age of the parents. People with Down's syndrome have characteristic features that include a rounded face, a protruding tongue, a broad, flat nose, and a sloping fold of skin over the inner corners of the eyes. They show deficits in cognitive development and motor development and usually die from cardiovascular problems by middle age, although modern medicine has extended life appreciably.

103 : Distinguish between Klinefelter syndrome and Turner syndrome.

Correct Answer : Answers will vary. Approximately 1 male in 500 has Klinefelter syndrome, which is caused by an extra X sex chromosome (an XXY sex chromosomal pattern). XXY males produce less of the male sex hormone testosterone than normal males. As a result, male primary and secondary sex characteristics—such as the testes, deepening of the voice, musculature, and the male pattern of body hair—do not develop properly. XXY males usually have enlarged breasts (gynecomastia) and are usually mildly mentally retarded, particularly in language skills. XXY males are typically treated with testosterone replacement therapy, which

can foster growth of sex characteristics and elevate the mood, but they remain infertile.Approximately 1 girl in 2,500 has a single X sex chromosome and, as a result, develops Turner syndrome. The external genitals of such girls are normal, but their ovaries are poorly developed, and they produce little estrogen. Girls with this problem are shorter than average and infertile. Researchers have connected a specific pattern of cognitive deficits with low estrogen levels: problems in visual-spatial skills, mathematics, and nonverbal memory.

104 : Discuss the cause and symptoms of Huntingtons disease (HD).

Correct Answer : Answers will vary. Huntington's disease (HD) is a fatal, progressive degenerative disorder and a dominant trait, affecting approximately 1 American in 18,000. Physical symptoms include uncontrollable muscle movements. Psychological symptoms include loss of intellectual functioning and personality change (van Dujin et al., 2014). Because the onset of HD is delayed until middle adulthood, many individuals with the defect have borne children only to discover years later that they and possibly half their offspring will inevitably develop it. Medicines can help deal with some symptoms.

105 : Why is amniocentesis carried out on pregnant women?

Correct Answer : Answers will vary. Amniocentesis is usually performed on the mother at 14-16 weeks after conception, although many physicians now perform the procedure earlier ("early amniocentesis"). In this fetal-screening method, the health professional uses a syringe (needle) to withdraw fluid from the amniotic sac. The fluid contains cells that are sloughed off by the fetus. The cells are separated from the amniotic fluid, grown in a culture, and then examined microscopically for genetic and chromosomal abnormalities.

106 : What were the conclusions of kinship studies?

Correct Answer : Answers will vary. Researchers study the distribution of a trait or behavior among relatives who differ in the degree of genetic closeness. The more closely people are related, the more genes they have in common. Parents and children have a 50% overlap in their genetic endowments, and so do siblings (brothers and sisters). Aunts and uncles have a 25% overlap with nieces and nephews, as do grandparents with grandchildren. First cousins share 12.5% of their genetic endowment. If genes are implicated in a trait, people who are more closely related should be more likely to share it.

107 : Discuss some of the causes of infertility in men.

Correct Answer : Answers will vary. A low sperm count—or lack of sperm—is the most common infertility problem in men. Men's fertility problems have a variety of causes: genetic factors, environmental poisons, diabetes, sexually transmitted infections (STIs), overheating of the testes (which happens now and then among athletes, such as long-distance runners), pressure (as from using narrow bicycle seats), aging, certain prescription and illicit drugs, and obesity (American Fertility Association, 2014). Sometimes the sperm count is adequate, but other factors such as prostate or hormonal problems deform sperm or deprive them of their motility. Motility can also be impaired by the scar tissue from infections, such as STIs.

108 : How does endometriosis result in infertility?

Correct Answer : Answers will vary. Endometriosis is the inflammation of endometrial tissue sloughed off into the abdominal cavity rather than out of the body during menstruation; the condition is characterized by abdominal pain and sometimes infertility. Endometriosis can obstruct the fallopian tubes, where conception normally takes place. Endometriosis has become

fairly common among women who delay childbearing. Each month, tissue develops to line the uterus in case the woman conceives. This tissue—the endometrium—is then sloughed off during menstruation. But some of it backs up into the abdomen through the fallopian tubes. It then collects in the abdomen, where it can cause abdominal pain and lessen the chances of conception. Physicians may treat endometriosis with hormones that temporarily prevent menstruation or through surgery.

109 : Discuss the types of teratogens.

Correct Answer : Answers will vary. Teratogens are environmental agents that can harm the embryo or fetus. They include drugs taken by the mother, such as marijuana and alcohol, and substances that the mother's body produces, such as Rh-positive antibodies. Another class of teratogens is the heavy metals, such as lead and mercury, which are toxic to the embryo. Hormones are healthful in countless ways—for example, they help maintain pregnancy—but excessive quantities are harmful to the embryo. Exposure to radiation can also harm the embryo. Finally, disease-causing organisms—also called pathogens—such as bacteria and viruses are also teratogens.

110 : Discuss the cause and effects of preeclampsia.

Correct Answer : Answers will vary. Preeclampsia (also called toxemia) is a life-threatening disease characterized by high blood pressure that may afflict women late in the second or early in the third trimester. Women with toxemia often have premature or undersized babies. Toxemia also causes some 15% to 20% of pregnancy-related maternal deaths. Preeclampsia appears to be linked to malnutrition, but the causes are unclear. Women who do not receive prenatal care are much more likely to die from preeclampsia than those who do receive prenatal care.

111 : Discuss the effects of Rh incompatibility on a fetus.

Correct Answer : Answers will vary. Rh incompatibility does not affect a first child because women will not have formed Rh antibodies. The chances of an exchange of blood are greatest during childbirth. If an exchange occurs, the mother produces Rh-positive antibodies to the baby's Rh-positive blood. These antibodies can enter the fetal bloodstream during subsequent deliveries, causing anemia, mental deficiency, or death.

112 : Discuss the effects of thalidomide on pregnant women.

Correct Answer : Answers will vary. Thalidomide was marketed in the 1960s as a treatment for insomnia and nausea and provides a dramatic example of critical periods of vulnerability to teratogens. A fetus's extremities undergo rapid development during the second month of pregnancy. Thalidomide taken during this period almost invariably causes birth defects, such as missing or stunted limbs. The drug is no longer prescribed for pregnant women.

113 : Discuss the cause of fetal alcohol syndrome (FAS).

Correct Answer : Answers will vary. Alcohol passes through the placenta, and drinking by a pregnant woman poses risks for the embryo and fetus. Heavy drinking can be lethal and is also connected with deficiencies and deformities in growth. Some children of heavy drinkers develop fetal alcohol syndrome (FAS) (Connor et al., 2006; see Figure 2.12 Figure 2.12). Babies with FAS are often smaller than normal, and so are their brains. They have distinct facial features: widely spaced eyes, an underdeveloped upper jaw, and a flattened nose. Psychological characteristics appear to reflect dysfunction of the brain.

114 : How does the amniotic sac protect the embryo and fetus?

Correct Answer : Answers will vary. The embryo and fetus develop within a protective amniotic sac in the uterus. This sac is surrounded by a clear membrane and contains amniotic fluid. The fluid serves as a kind of natural air bag or shock absorber, allowing the embryo and fetus to move around without injury. It also helps maintain an even temperature.

115 : Discuss the role played by a parents age in relation to prenatal development.

Correct Answer : Answers will vary. Older fathers are more likely to produce abnormal sperm. The mother’s age also matters. From a biological vantage point, the 20s may be the ideal age for women to bear children. Teenage mothers have a higher incidence of infant mortality and children with low birth weight. Girls who become pregnant in their early teens may place a burden on bodies that may not have adequately matured to facilitate pregnancy and childbirth. Women’s fertility declines gradually until the mid-30s, after which it declines more rapidly. Women possess all their ova in immature form at birth. Older fathers are more likely to produce abnormal sperm, leading to fertility problems.