

Leifer: Maternity Nursing: An Introductory Text, 11th Edition

Chapter 03: Fetal Development

Test Bank

MULTIPLE CHOICE

1. The nucleus of each somatic (body) cell contains _____ chromosomes.
 - a. 23
 - b. 28
 - c. 46
 - d. 48

ANS: C

Each somatic cell contains 22 pairs of autosomes and two sex chromosomes for a total of 46.

DIF: Cognitive Level: Knowledge REF: 30 OBJ: 2
TOP: Genetics KEY: Nursing Process Step: N/A MSC: NCLEX: N/A

2. Which statement best describes the relationship between genes and chromosomes?
 - a. Chromosomes and genes are completely independent of each other.
 - b. Genes are involved in meiosis only, and chromosomes are involved in mitosis only.
 - c. Chromosomes are composed of genes, which are DNA segments controlling heredity.
 - d. Absence of a single gene is unimportant; absence of a chromosome results in cell death.

ANS: C

A gene can be described as a single bead and a chromosome as a string of beads.
Chromosomes are made up of chains of genes.

DIF: Cognitive Level: Comprehension REF: 29-30 | Figure 3-1
OBJ: 3 TOP: Genetics KEY: Nursing Process Step: N/A
MSC: NCLEX: N/A

3. During a prenatal visit, a patient asks what determines the sex of the baby. The correct explanation is that:
 - a. The mother determines the sex by the number of Y chromosomes she contributes.
 - b. Females have X chromosomes only, and males have Y chromosomes only, so there are equal chances of each child being male or female.
 - c. Two X chromosomes produce a female child, whereas two Y chromosomes produce a male child.
 - d. If the father contributes an X chromosome, the baby will be a girl; if he contributes a Y chromosome, the baby will be a boy.

ANS: D

The ovum has two X chromosomes; the sperm has one X and one Y chromosome. If the sperm contributes the X chromosome, the zygote will have two X chromosomes and will be female. If the sperm contributes the Y chromosome, the zygote will have one X and one Y chromosome and will be male.

DIF: Cognitive Level: Application REF: 31 OBJ: 4
TOP: Genetics KEY: Nursing Process Step: Implementation
MSC: NCLEX: N/A

4. Fertilization normally occurs in the:
- Abdominal cavity
 - Fallopian tube
 - Ovary
 - Uterus

ANS: B

Fertilization normally occurs in the outer one-third of a fallopian tube.

DIF: Cognitive Level: Knowledge REF: 31 OBJ: 5
TOP: Fertilization KEY: Nursing Process Step: N/A MSC: NCLEX: N/A

5. What is the correct sequence in the development of the fertilized ovum?
- Zygote, morula, blastocyst, embryo, fetus
 - Blastocyst, trophoblast, morula, fetus, embryo
 - Zygote, morula, trophoblast, blastocyst, fetus
 - Trophoblast, morula, zygote, embryo, fetus

ANS: A

The stages of development of the fertilized ovum are zygote, morula, blastocyst, embryo, and fetus.

DIF: Cognitive Level: Comprehension REF: 31-32 | Box 3-1
OBJ: 6 TOP: Implantation KEY: Nursing Process Step: N/A
MSC: NCLEX: N/A

6. From the third week to the eighth week of gestation, the product of conception (conceptus) is referred to as the:
- Zygote
 - Embryo
 - Fetus
 - Infant

ANS: B

The embryonic period of development extends from the third to the eighth week after conception. At fertilization, a zygote is formed from the nucleus of the sperm and the nucleus of the ovum. The fetal period begins with the ninth week after conception and extends until the infant is born at delivery.

DIF: Cognitive Level: Knowledge REF: 32 | Box 3-1 OBJ: 6
TOP: Implantation KEY: Nursing Process Step: N/A MSC: NCLEX: N/A

7. The functions of amniotic fluid include:
- Restricting fetal movement
 - Maintaining a constant temperature for the fetus
 - Preventing adherence of the amnion to the chorion
 - Exchanging materials between the blood of the mother and the fetus

ANS: B

The amniotic fluid maintains a constant temperature for the fetus. It also permits fetal movement and prevents adherence of the amnion to the fetus. Exchanges between the blood of the mother and the fetus occur through the placenta.

DIF: Cognitive Level: Knowledge REF: 33 | Box 3-3 OBJ: 8
TOP: Fetal Membranes and Amniotic Fluid KEY: Nursing Process Step: N/A
MSC: NCLEX: N/A

8. An example of the endocrine function of the placenta is:
- The production of human chorionic gonadotropin (hCG) to stimulate uterine contractions
 - Suppression of the corpus luteum to prevent spontaneous abortion
 - The production of human placental lactogen (hPL) to suppress the mother's metabolism
 - Stimulation of the corpus luteum to produce estrogen and progesterone

ANS: D

The placenta produces hCG, which stimulates the corpus luteum to secrete the continuous supply of estrogen and progesterone needed to maintain pregnancy.

DIF: Cognitive Level: Comprehension REF: 34-35 OBJ: 7
TOP: Placenta KEY: Nursing Process Step: N/A MSC: NCLEX: N/A

9. Which sequence of events accurately describes circulation in the umbilical cord?
- Oxygenated blood flows from the fetus to the placenta through the umbilical vein.
 - Deoxygenated blood flows from the fetus to the placenta through the umbilical arteries.
 - Deoxygenated blood flows from the placenta to the fetus through the umbilical artery.
 - Oxygenated blood flows from the placenta to the fetus through the umbilical artery.

ANS: B

From the fetus, deoxygenated blood flows through the two umbilical arteries to the placenta, where carbon dioxide and waste products are passed into the maternal blood for elimination. Oxygenated blood passes from the mother, through the placenta, into the umbilical vein, and to the fetus.

DIF: Cognitive Level: Comprehension REF: 35-36 | Figure 3-6
OBJ: 9 TOP: Umbilical Cord KEY: Nursing Process Step: N/A
MSC: NCLEX: N/A

10. Which action accurately describes the shunts in fetal circulation?
- The foramen ovale bypasses the left ventricle.
 - The ductus venosus bypasses the liver.
 - The umbilical artery bypasses the stomach.
 - The ductus arteriosus bypasses the aorta.

ANS: B

The ductus venosus bypasses the liver, the foramen ovale bypasses the right ventricle, and the ductus arteriosus bypasses the lungs.

DIF: Cognitive Level: Comprehension REF: 36 | Figure 3-7 | Table 3-1

OBJ: 9

TOP: Fetal Circulation

KEY: Nursing Process Step: N/A

MSC: NCLEX: N/A

11. The foramen ovale closes after birth because of:
- Increased pressure in the left atrium
 - High oxygen content of the blood
 - Constriction of umbilical vessels
 - Decreased pressure in the right ventricle

ANS: A

The increase in pulmonary blood flow after birth causes the pressure in the left atrium to exceed that of the right atrium. This functionally closes the foramen ovale. Permanent closure occurs as adhesions develop.

DIF: Cognitive Level: Comprehension REF: 36 | Table 3-2

OBJ: 9

TOP: Circulatory Changes After Birth

KEY: Nursing Process Step: N/A

MSC: NCLEX: N/A

12. The beginnings of all major organs are present in the fetus by the end of _____ weeks.
- 4
 - 7
 - 9
 - 12

ANS: B

The beginnings of all major organs are present by the end of the seventh week. Therefore, it is important that the mother avoid substances that could disrupt organ development in early pregnancy.

DIF: Cognitive Level: Knowledge

REF: 37

OBJ: 6

TOP: Fetal Development

KEY: Nursing Process Step: N/A

MSC: NCLEX: N/A

13. A mother who had no prenatal care delivers in the emergency department. She did not know her due date. The infant looks rather thin and has long nails, abundant hair, little vernix caseosa, and dry skin. The nurse would estimate the infant's gestational age as _____ weeks.
- Less than 34
 - Approximately 36
 - Approximately 40

- d. More than 42

ANS: D

The characteristics described are typical of a postterm (postmature) infant, that is, one born past 42 weeks' gestation.

DIF: Cognitive Level: Application
TOP: Fetal Development
MSC: NCLEX: Physiologic Integrity

REF: 37 OBJ: 6
KEY: Nursing Process Step: Assessment

14. Oxygen content is highest in which of the following fetal structures?
- Ductus venosus
 - Foramen ovale
 - Umbilical artery
 - Umbilical vein

ANS: D

Because oxygenated blood from the mother passes through the placenta to the fetus through the umbilical vein, blood in the umbilical vein has the highest oxygen content of the listed structures.

DIF: Cognitive Level: Comprehension
TOP: Fetal Circulation
MSC: NCLEX: N/A

REF: 35 OBJ: 9
KEY: Nursing Process Step: N/A

15. Twins who originate from a single ovum and sperm are:
- Identical or monozygotic
 - Nonidentical or monozygotic
 - Fraternal or dizygotic
 - Fraternal or monozygotic

ANS: A

Twins who originate from a single ovum and sperm share the same genetic makeup and will be identical. The term monozygotic means "of one zygote," whereas dizygotic refers to two zygotes.

DIF: Cognitive Level: Knowledge
OBJ: 10
MSC: NCLEX: N/A

REF: 37 | 40 | Figure 3-9

TOP: Multifetal Pregnancy

KEY: Nursing Process Step: N/A

16. A woman who is 39 weeks' pregnant has been diagnosed with oligohydramnios. The nurse recognizes that following birth her newborn must be assessed for which type of fetal abnormality?
- Cardiac
 - Gastrointestinal
 - Renal
 - Neurologic

ANS: C

Although most amniotic fluid appears to be derived from maternal blood, the fetus also adds to the fluid by excreting urine into it. Oligohydramnios, or decreased amniotic fluid, is therefore associated with renal anomalies.

DIF: Cognitive Level: Analysis

REF: 33

OBJ: 8

TOP: Fetal Membranes and Amniotic Fluid

KEY: Nursing Process Step: Assessment MSC: NCLEX: Health Promotion and Maintenance

17. A pregnant woman at 30 weeks' gestation tells the nurse that she dropped a pan last week and her baby jumped at the noise. Which of the following responses by the nurse is most accurate?
- "Let me know if it happens again, since we need to report that to your health care provider."
 - "Babies respond to sound starting at about the twenty-fourth week of gestation."
 - "The fetus is demonstrating the aural reflex."
 - "That movement was just a coincidence; unborn babies can't respond to sound like that."

ANS: B

By about the twenty-fourth week of gestation, a fetus is able to hear and respond to sounds, including voices.

DIF: Cognitive Level: Analysis

REF: 39 | Table 3-3

OBJ: 6

TOP: Fetal Development

KEY: Nursing Process Step: Implementation

MSC: NCLEX: N/A

18. During an ultrasound, a patient at 41 weeks' gestation is found to have an amniotic fluid level between 800 mL and 1000 mL. The nurse understands that this indicates:
- Hydramnios
 - Oligohydramnios
 - A normal amniotic fluid level
 - That the baby has a fetal abnormality

ANS: C

The amount of amniotic fluid present at term varies from 800 to 1000 mL. Levels less than 300 mL are known as oligohydramnios. Levels greater than 2 L are known as hydramnios. Both hydramnios and oligohydramnios are associated with fetal abnormalities.

DIF: Cognitive Level: Application

REF: 33

OBJ: 8

TOP: Fetal Membranes and Amniotic Fluid

KEY: Nursing Process Step: N/A

MSC: NCLEX: N/A

19. During a prenatal class, a participant asks when the most critical period of fetal development occurs. Which of the following is the most appropriate response?
- "The embryonic period, from the second to eighth week after conception."
 - "Immediately following implantation."
 - "During the zygotic phase after fertilization."
 - "From twenty to thirty weeks of gestation, when the organs are formed."

ANS: A

The embryonic period of development is when the basic organ structures are formed. During this time, teratogenic agents have the most damaging effects on the developing embryo.

DIF: Cognitive Level: Application REF: 37 OBJ: 6
TOP: Embryonic Development KEY: Nursing Process Step: N/A
MSC: NCLEX: N/A

20. The patient asks, "When will my baby be able to live outside my body?" The most appropriate response is:
- a. "You don't need to worry. Your baby will be fine."
 - b. "The age of fetal viability is twenty weeks' gestation."
 - c. "The best chance of survival is at thirty weeks' gestation."
 - d. "Doctors don't know because every pregnancy is different."

ANS: B
The age of fetal viability is 20 weeks' gestation.

DIF: Cognitive Level: Application REF: 37 OBJ: 6
TOP: Fetal Development KEY: Nursing Process Step: N/A
MSC: NCLEX: N/A

21. What must occur for a recessive trait to be expressed in a child?
- a. Both parents must carry the recessive trait.
 - b. One parent must carry the recessive trait.
 - c. Neither parent can carry the recessive trait.
 - d. A sibling must carry the recessive trait.

ANS: A
Each parent must carry a recessive trait for there to be a chance of the offspring to display the trait.

DIF: Cognitive Level: Comprehension REF: 30 OBJ: 3
TOP: Genes KEY: Nursing Process Step: N/A MSC: NCLEX: N/A

22. Where are estrogen and progesterone produced during pregnancy until the placenta begins functioning as an exocrine gland?
- a. Umbilical cord
 - b. Corpus luteum
 - c. Thymus gland
 - d. Breast tissue

ANS: B
The corpus luteum produces estrogen and progesterone until the placenta is mature enough to act as an exocrine gland.

DIF: Cognitive Level: Comprehension REF: 34 OBJ: 7
TOP: Placental Hormones KEY: Nursing Process Step: N/A
MSC: NCLEX: N/A

MULTIPLE RESPONSE

23. The pregnant patient is being monitored for low progesterone levels. She asks the nurse why progesterone is important. Which response(s) by the nurse would be appropriate? (Select all that apply.)
- a. "It maintains the uterine lining for implantation of the zygote."
 - b. "It reduces uterine contractions to help prevent spontaneous abortions."
 - c. "It prepares the glands of the breasts for lactation."
 - d. "It increases blood flow to the uterine vessels."
 - e. "It stimulates the testes of the male fetus to produce testosterone, which aids in the development of the reproductive tract."

ANS: A, B, C, E

The hormone progesterone is important for the preparation and maintenance of pregnancy.

DIF: Cognitive Level: Application

REF: 34

OBJ: 7

TOP: Placental Functions

KEY: Nursing Process Step: N/A

MSC: NCLEX: N/A

24. The patient asks the nurse why estrogen is important to pregnancy. Which statement(s) by the nurse would be accurate? (Select all that apply.)
- a. "Estrogen increases blood flow to uterine vessels."
 - b. "Estrogen stimulates uterine growth."
 - c. "Estrogen stimulates the release of prostaglandins."
 - d. "Estrogen stimulates the production of testosterone."
 - e. "Estrogen stimulates development of the breast ducts to prepare for lactation."

ANS: A, B, E

The hormone estrogen is necessary for the preparation and maintenance of pregnancy.

DIF: Cognitive Level: Application

REF: 34-35

OBJ: 7

TOP: Placental Functions

KEY: Nursing Process Step: N/A

MSC: NCLEX: N/A

25. The patient asks whether something she did could have contributed to her conceiving twins. Which response(s) would be appropriate? (Select all that apply.)
- a. "Fertility drugs have increased the incidence in multifetal pregnancies."
 - b. "Women who are older have an increased probability of having twins."
 - c. "Decreased maternal folate levels have been shown to cause multifetal pregnancies."
 - d. "In vitro fertilization has increased the incidence of multifetal pregnancies."
 - e. "Increased vitamin C levels have been linked to multifetal pregnancies."

ANS: A, B, D

The use of fertility drugs and in vitro fertilization has increased the incidence of multifetal pregnancies. Women who are older have an increased probability of having multifetal pregnancies.

DIF: Cognitive Level: Application

REF: 37

OBJ: 10

TOP: Multifetal Pregnancy

KEY: Nursing Process Step: N/A

MSC: NCLEX: N/A

26. The umbilical cord contains which feature(s)? (Select all that apply.)
- a. Wharton's jelly
 - b. Two arteries
 - c. Nerves
 - d. Cartilage
 - e. One vein

ANS: A, B, E

The umbilical cord is composed only of Wharton's jelly, two arteries, and one vein.

DIF: Cognitive Level: Comprehension

REF: 35

OBJ: 8

TOP: Umbilical Cord

KEY: Nursing Process Step: N/A

MSC: NCLEX: N/A