1. A baby is born with what the physician believes is a diagnosis of trisomy 21. This means that the infant has three number 21 chromosomes. What factor describes this genetic change?
   A) The mother also has genetic mutation of chromosome 21.
   B) The patient has a nondisjunction occurring during meiosis.
   C) During meiosis, a reduction of chromosomes resulted in 23.
   D) The patient will have a single X chromosome and infertility.

   Ans: B

Feedback: During meiosis, a pair of chromosomes may fail to separate completely, creating a sperm or oocyte that contains either two copies or no copy of a particular chromosome. This sporadic event, called nondisjunction, can lead to trisomy. Down syndrome is an example of trisomy. The mother does not have a mutation of chromosome 21, which is indicated in the question. Also, Trisomy does not produce a single X chromosome and infertility. Genes are packaged and arranged in a linear order within chromosomes, which are located in the cell nucleus. In humans, 46 chromosomes occur in pairs in all body cells except oocytes and sperm, which contain only 23 chromosomes.

2. The nurse is notified that she is receiving a new patient and that the patient's old charts have been ordered to the floor. When the old charts arrive, the nurse looks through them and notes the patient has a gene mutation that affects protein structure, producing hemoglobin S. The nurse knows that with this gene mutation, the patient will experiences symptoms of what?
A) Edema
B) Thrombotic organ damage
C) Metastasis of a glioblastoma
D) Amyotrophic lateral sclerosis

Ans: B

Feedback: Sickle cell anemia is an example of a genetic condition caused by a small gene mutation that affects protein structure, producing hemoglobin S. A person who inherits two copies of the hemoglobin S gene mutation has sickle cell anemia and experiences the symptoms of severe anemia and thrombotic organ damage resulting in hypoxia. Amyotrophic lateral sclerosis is a neurodegenerative disease that can occur as a result of an inherited mutation but not a mutation of hemoglobin S. The patient with sickle cell anemia may experience edema, but it would not be related to the gene mutation. A glioblastoma is a neurologic tumor.

3. During the admission assessment, the nurse notes many café-au-lait spots on the patient's trunk, back, neck, and legs and suspects the patient has neurofibromatosis. The patient's chart confirms that the patient does have neurofibromatosis type 1. Based on the nurse's knowledge of neurofibromatosis, the nurse understands that a single family member has what?
A) A spontaneous mutation
B) A germline mutation
C) A nondisjunction
D) A monosomy

Ans: A

Feedback: Spontaneous mutations take place in individual oocytes or sperm at the time of conception. These mutations are not inherited in other family members. However, a person who carries the new “spontaneous” mutation may pass on the mutation to his or her children.
Achondroplasia, Marfan syndrome, and neurofibromatosis type 1 are examples of genetic conditions that may occur in a single family member as a result of spontaneous mutation. Germline mutations are passed on to all daughter cells when body cells replicate. During meiosis, a pair of chromosomes may fail to separate completely, creating a sperm or oocyte that contains two copies or no copy of a particular chromosome. This sporadic event, called nondisjunction, can lead to either trisomy or a monosomy.

4. A 45-year-old man has just been diagnosed with Huntington disease. He and his wife are concerned about their four children. What will the nurse explain about the children's possibility of inheriting the gene for the disease?
A) Each child will have a 25% chance of inheriting the disease.
B) Each child will have a 50% chance of inheriting the disease.
C) Each child will have a 75% chance of inheriting the disease.
D) Each child will have no chance of inheriting the disease.

Ans: B
Chapter: 9
Client Needs: D-4
Cognitive Level: Comprehension
Difficulty: Moderate
Integrated Process: Nursing Process
Objective: 3
Page and Header: 124, Integrating Genetic and Genomic Knowledge

Feedback: Huntington disease is an autosomal dominant disorder. Autosomal dominant inherited conditions affect female and male family members equally and follow a vertical pattern of inheritance in families. A person who has an autosomal dominant inherited condition carries a gene mutation for that condition on one chromosome pair. Each of that person's offspring has a 50% chance of inheriting the gene mutation for the condition and a 50% chance of inheriting the normal version of the gene. Based on this information, the choices of 25%, 75%, or no chance of inheriting the disease are incorrect.

5. A young woman and her husband want to start a family. The young woman explains to the nurse that she had a retinoblastoma as a child. The woman and her husband are concerned about the chances of their son or daughter developing a retinoblastoma. What is important for the nurse to explain to the couple?
A) Retinoblastoma is an autosomal recessive inheritance in which each parent carries the gene mutation.
B) Retinoblastoma is an X-linked inheritance and all males inherit an X chromosome from their mothers.
C) Retinoblastoma is an autosomal dominant inheritance that has incomplete penetrance and can skip a generation.
D) Retinoblastoma is a pattern that is more horizontal than vertical; relatives of a single generation tend to have the condition.

Ans: C

Feedback: Retinoblastoma is an autosomal dominant inheritance that has incomplete penetrance, and the gene appears to skip a generation, thus leading to errors in interpreting family history and in genetic counseling. Autosomal recessive conditions have a pattern that is more horizontal than vertical; relatives of a single generation tend to have the condition. Genetic conditions inherited in an autosomal recessive pattern are frequently seen among particular ethnic groups and usually occur more often in children of parents who are related by blood, such as first cousins. X-linked conditions may be inherited in recessive or dominant patterns. In both, the gene mutation is located on the X chromosome.

6. A 47-year-old woman with osteoarthritis and hypertension is diagnosed with breast cancer. She tells the nurse that her mother also suffered from osteoarthritis and hypertension, and she developed breast cancer at the age of 51 years. What would the nurse explain this could be a result of?
   A) An X-linked inheritance
   B) An autosomal recessive inheritance
   C) An autosomal dominant inheritance
   D) A multifactorial inheritance

Ans: D

Feedback: Many birth defects and common health conditions such as heart disease, high blood pressure, cancer, osteoarthritis, and diabetes occur as a result of interactions of multiple gene
mutations and environmental influences. Thus, they are called multifactorial or complex conditions. The other answers are incorrect because X-linked conditions, autosomal recessive conditions, and autosomal dominant conditions are not caused by the interactions of multiple gene mutations and environmental influences.

7. A new patient has come to the clinic. While the nurse is taking the patient's history, the patient tells the nurse she is trying to get pregnant and she is very fearful she will have another miscarriage. She states she has lost two pregnancies and she shares with the nurse that she does not know why she lost the babies. Based on this patient's history, what recommendation should the nurse make at the present time?

A) Instruct her to continue to try to get pregnant.
B) Let the patient know that her loss may not occur again.
C) Instruct her on chromosome testing studies.
D) Tell her to have an amniocentesis with the next pregnancy.

Ans: C

8. A community health nurse is visiting her 16-year-old patient, a new mother. The nurse explains to the patient and her mother the genetic screening that is required by the state's law. The patient asks why it is important to have the testing done on the infant. What is the nurse's best response?

A) “Genetic testing is a way to determine the rate of infectious disease.”
B) “It is important to test newborns for PKU, congenital hypothyroidism, and galactosemia.”
C) “PKU, congenital hypothyroidism, and galactosemia are conditions that could result in disability or death if untreated.”
D) “This testing is required and you will not be able to refuse it. It usually is free so there is no reason to refuse it.”

Ans: C

Chapter: 9
Client Needs: B
Cognitive Level: Comprehension
Difficulty: Moderate
Integrated Process: Nursing Process
Objective: 4
Page and Header: 128, Genetic and Genomic Technologies in Practice

Feedback: The first aim is to improve management, that is, identify people with treatable genetic conditions that could prove dangerous to their health if left untreated. The other answers are incorrect because genetic testing does not determine the rate of infectious disease. Answer B does not adequately explain the rationale for newborn testing. Answer D fails to inform the patient of the rationale for newborn testing.

9. A 50-year-old woman presents at the clinic with complaints of forgetfulness and jerky movements of her head. The patient tells the nurse that every day she forgets one to two tasks or items in her daily routine. She states her mother had some kind of mental illness in which she had to be institutionalized at age 42 and passed away at age 45. She stated, “My mother forgot who we were when she was institutionalized.” Based on this information, what does the nurse suspect?
A) Huntington disease
B) Heart disease
C) Cerebrovascular accident
D) Alzheimer's disease

Ans: D
Chapter: 9
Client Needs: D-1
Cognitive Level: Application
Difficulty: Difficult
Integrated Process: Nursing Process
Objective: 1
Page and Header: 131, Genetic and Genomic Technologies in Practice

Feedback: Nurses must be alert for family histories indicating that multiple generations (autosomal dominant inheritance) or multiple siblings (autosomal recessive inheritance) are
affected with the same condition or that onset of disease is earlier than expected (multiple
generations with early onset). When a family history of disease is identified, the nurse must be
responsible for making the patient aware that this family history is a risk factor for disease.
Answers A, B, and C are incorrect because Huntington disease is noted with mental
deterioration, but the patient presents with jerky movements of the head and limbs. Heart disease
and cerebrovascular accident can occur in a woman her age, but there is no evidence of these
conditions in the patient scenario.

10. The occupational health nurse is conducting yearly vision and hearing screenings. A 50-year-
old man states, “My father had colon cancer. I really don't understand why they recommend a
colonoscopy.” The occupational health nurse explains the need for a colonoscopy and provides
the patient with additional written information. What could the nurse do to provide information
to more individuals?
A) Plan a health fair for the employees that provides information about age-related diseases.
B) Refer every employee over the age of 50 to a gastroenterologist for a screening colonoscopy.
C) Provide instruction on diet and exercise as it relates to the prevention of colon cancer in
people over 50.
D) Place brochures in the nurses' facility for the employees to access in answering their
questions.

Ans: A
Chapter: 9
Client Needs: D-3
Cognitive Level: Application
Difficulty: Difficult
Integrated Process: Nursing Process
Objective: 1
Page and Header: 132, Genetic and Genomic Technologies in Practice

Feedback: The advantage of a health fair is that it will provide information on all age-related
diseases and the prevention of disease. It would be impossible for the nurse to refer all
employees over the age of 50 to a gastroenterologist. In the provision of instruction on diet and
exercise, this is a good health-promotion intervention by does not address the need for screening.
Placing brochures in the nurses' facility will provide information to a group of people but will
not have the net affect that a health fair can in educating people on genetic and lifestyle-related
diseases.

11. You are the nurse at a genetics clinic. You are reviewing the health and genetic history of a
woman whose mother died of breast cancer. It is important that you document genetic history
appropriately. Which of the following is the most important factor documented in the patient's
Feedback: A well-documented family history is a tool used by the health care team to make a diagnosis, identify teaching strategies, and establish a pattern of inheritance. The family history should include at least three generations, as well as information about the current and past health status of all family members, including the age of onset of any illnesses and cause of death and age at death. Information on current medications, adverse drug reactions, and immunizations are important factors to be gathered in the health history but are not part of the genetic history.

12. A couple wants to start a family. They are concerned that their child will be at risk for cystic fibrosis because they each have a cousin with cystic fibrosis. They are seeing a nurse practitioner for preconceptual counseling. What would the nurse practitioner tell them about cystic fibrosis?
A) It is an autosomal dominant disorder.
B) It is passed by mitochondrial inheritance.
C) It is an X-linked inherited disorder.
D) It is an autosomal recessive disorder.

Ans: D
Chapter: 9
Client Needs: D-3
Cognitive Level: Application
Difficulty: Difficult
Integrated Process: Nursing Process
Objective: 2
Page and Header: 135, Applications of Genetics and Genomics in Nursing Practice

Feedback: Cystic fibrosis is autosomal recessive. Nurses also consider other issues when assessing the risk for genetic conditions in couples and families. For example, when obtaining a preconception or prenatal family history, the nurse asks if the prospective parents have common ancestors. This is important to know because people who are related have more genes in
common than those who are unrelated, thus increasing their chance for having children with autosomal recessive inherited condition such as cystic fibrosis. Mitochondrial inheritance occurs with defects in energy conversion and affects the nervous system, kidney, muscle, and liver. X-linked inheritance, which has been inherited from a mutant allele of the mother, affects males. Autosomal dominant is an X-linked dominant genetic disease.

13. A pregnant woman has a child at home who has been diagnosed with neurofibromatosis 1. She asks the nurse what she should look for in the new baby that would indicate that it also has neurofibromatosis 1. What sign should the nurse instruct the woman to look for in the new baby?  
A) Increased urination  
B) Projectile vomiting  
C) Café-au-lait spots  
D) Xanthoma  

Ans: C  
Chapter: 9  
Client Needs: D-3  
Cognitive Level: Application  
Difficulty: Difficult  
Integrated Process: Nursing Process  
Objective: 2  
Page and Header: 135, Applications of Genetics and Genomics in Nursing Practice  
Feedback: Physical assessment may provide clues that a particular genetic condition is present in a person and family. Family history assessment may offer initial guidance regarding the particular area for physical assessment. For example, a family history of neurofibromatosis type 1, an inherited condition involving tumors of the central nervous system, would prompt the nurse to carry out a detailed assessment of closely related family members. Skin findings such as café-au-lait spots, axillary freckling, or tumors of the skin (neurofibromas) would warrant referral for further evaluation, including genetic evaluation and counseling. A family history of familial hypercholesterolemia would alert the nurse to assess family members for symptoms of hyperlipidemias (xanthomas, corneal arcus, abdominal pain of unexplained origin). As another example, increased urination could indicate type 1 diabetes. Projectile vomiting is indicative of pyloric stenosis.

14. A 46-year-old man, estranged from his siblings, has begun showing signs of dementia and has been diagnosed with Alzheimer's disease. The nurse tells him how important it is that he inform his siblings of his disease. He refuses stating, “I don't want them to know. Let them find out on their own.” What should the nurse do?  
A) Call the patient's brother and inform him of his risk for development of Alzheimer's disease.
B) Notify the geneticist and have him instruct the patient on his siblings' and parents' risk.
C) Notify the siblings' physician about the patient's risk for development of Alzheimer's disease.
D) Instruct the patient on the importance of notifying the siblings and keep his information confidential.

Ans: D

Chapter: 9
Client Needs: D-3
Cognitive Level: Application
Difficulty: Difficult
Integrated Process: Nursing Process
Objective: 4
Page and Header: 138, Applications of Genetics and Genomics in Nursing Practice

Feedback: The nurse must honor the patient's wishes while explaining to the patient the potential benefit this information may have to other family members. Involving the geneticist in the patient's care is very important, but notifying family members or physicians would be a breach of confidentiality. A nurse may want to disclose genetics information to family members who could experience significant harm if they do not know such information. However, the patient may have other views and may wish to keep this information from the family, resulting in an ethical dilemma for patient and nurse.

15. Two parents with two recessive genes each for six toes have what chance they will have a child with six toes?
A) 25%
B) 50%
C) 75%
D) 100%

Ans: A

Chapter: 9
Client Needs: D-4
Cognitive Level: Analysis
Difficulty: Difficult
Integrated Process: Nursing Process
Objective: 3
Page and Header: 125, Integrating Genetic and Genomic Knowledge

Feedback: When two carrier parents have children together, they have a 25% chance of having a child who inherits the gene mutation from each parent and who will have the condition. The other answers are incorrect because these parents chance of having a child with six toes are not 50%, 75%, or 100%.
16. An older pregnant woman has come to the clinic for her first prenatal visit. She asks the nurse about age guidelines for genetic counseling and prenatal testing. The nurse informs the patient that genetic counseling and prenatal testing should be performed for all pregnant women in which age group?
A) 18 to 25
B) 25 to 30
C) 35 and older
D) 18 and under

Ans: C
Chapter: 9
Client Needs: B
Cognitive Level: Application
Difficulty: Moderate
Integrated Process: Nursing Process
Objective: 2
Page and Header: 126, Integrating Genetic and Genomic Knowledge

Feedback: Women who are 35 years of age or older have an increasing chance for giving birth to infants with chromosomal differences, including an extra or missing chromosome.

17. A 40-year-old man who has been separated from his father since birth tells the nurse that his father recently contacted him to inform him that he is dying of Huntington disease. What is an essential psychosocial component of care for this patient?
A) Assist the patient in determining signs of neuromuscular weakness
B) Instruct the family on the potential side effects of medications
C) Evaluate the effect of anti-anxiety medications on the patient's mood
D) Provide genetic counseling, evaluation, and testing for the disease

Ans: D
Chapter: 9
Client Needs: D-4
Cognitive Level: Comprehension
Difficulty: Moderate
Integrated Process: Nursing Process
Objective: 4
Page and Header: 136, Applications of Genetics and Genomics in Nursing Practice

Feedback: The provision of genetic counseling, evaluation, and testing of the disease is essential in psychosocial care. Coping enhancement is essential throughout the entire genetic counseling,
evaluation, and testing process. The other answers are incorrect because assisting the patient in
determining the signs of neuromuscular weakness will assist in the psychosocial component of
the patient's care but has a greater effect on the physical aspects of patient care. Instructing the
family on the potential side effects of medications is important in the care of the patient both
psychosocially and medically. Evaluating the effect of anti-anxiety medications is important in
the psychosocial care of the patient but will not be necessary if the patient is not taking these
medications.

18. A nurse is teaching a class to a group of newly diagnosed patients with type 1 diabetes. The
discussion today is on the effect of diet and exercise as it relates to blood sugar. What is this
intervention an example of?
A) Psychosocial caring
B) Coping enhancement
C) Genetic counseling
D) Decision-making support

Ans: B
Chapter: 9
Client Needs: D-3
Cognitive Level: Application
Difficulty: Difficult
Integrated Process: Nursing Process
Objective: 1
Page and Header: 137, Applications of Genetics and Genomics in Nursing Practice

Feedback: Coping enhancement involves helping people adapt to perceived stressors or changes
that interfere with daily living and functioning. The other answers are incorrect because while
psychosocial caring is important in the provision of care for patients with Type 1 diabetes, it is
not related to diet and exercise effects on blood sugar. Decision-making support is an important
nursing intervention in many genetic counseling situations. This scenario does not involve
genetic counseling.

19. An African American couple presents for a genetic counseling appointment. They are
pregnant and are concerned about their child. What would a patient of African American heritage
have genetic carrier testing for?
A) Meckel's diverticulum
B) Sickle cell anemia
C) Asthma
D) Rubella
20. Genetics-related health care is basic to the holistic practice of nursing. What should nursing practice in genetics include?
A) Identifying genetic markers
B) Gathering relevant family and medical history information
C) Providing advice on termination of pregnancy
D) Discouraging females to conceive after the age of 40 years

Ans: B
Chapter: 9
Client Needs: B
Cognitive Level: Application
Difficulty: Moderate
Integrated Process: Nursing Process
Objective: 1
Page and Header: 120, Genomic Framework for Nursing Practice

Feedback: The nurse's role in genetic counseling is to provide information, collect relevant data, offer support, and coordinate resources. The other answers are incorrect because the nurse does not provide advice or influence the patient to make choices. The nurse also does not identify genetic markers.

21. What must nurses understand to meet the challenges of personalized medicine?
A) That personalized medicine is holistic
B) The collaboration necessary in genomic medicine
C) The ethnic basis for genomic medicine
D) The new technologies and treatments
22. When genetics and genomics were incorporated into nursing, the decision was made to include them in what part of the nursing process?
A) Interventions that support identification of the genetics-related health needs of people
B) Responses to nursing interventions that support generalized nursing care
C) The planning of interventions that address the medical genetic needs of people
D) The psychosocial assessment of the genetic needs of people

Ans: A
Chapter: 9
Client Needs: B
Cognitive Level: Application
Difficulty: Moderate
Integrated Process: Nursing Process
Objective: 1
Page and Header: 120, Introduction

Feedback: The incorporation of genetics and genomics into nursing means including genetics and genomics in health assessments, planning, and interventions that support identification of and response to the changing genetics-related health needs of people. The other answers are incorrect because the responses measured in genomic nursing care are not to generalized nursing care, nurses do not plan medical interventions, and interventions are not planned in the assessment phase of nursing care.

23. What is nursing's unique contribution to genomic medicine?
A) Its physical assessment capabilities
B) Its holistic perspective  
C) Its biopsychologic experiences  
D) Its evaluation capabilities  

Ans: B  
Chapter: 9  
Client Needs: A-1  
Cognitive Level: Comprehension  
Difficulty: Moderate  
Integrated Process: Nursing Process  
Objective: 1  
Page and Header: 120, Genomic Framework for Nursing Practice  

Feedback: The unique contribution of nursing to genomic medicine is its holistic perspective that takes into account each person's intellectual, physical, spiritual, social, cultural, biopsychologic, ethical, and esthetic experiences. The other answers are incorrect because nursing's assessment and evaluation capabilities are used in all areas where nursing is practiced. Nursing does not have biopsychologic experiences.  

24. In genetic and genomic medicine, what do nurses help both individuals and families understand?  
A) How genetic and psychological factors influence weekly rituals  
B) How genomic and physical factors influence longevity  
C) How genetic and environmental factors influence health and disease  
D) How physical factors influence genetics and wellness  

Ans: C  
Chapter: 9  
Client Needs: B  
Cognitive Level: Comprehension  
Difficulty: Moderate  
Integrated Process: Teaching/Learning  
Objective: 1  
Page and Header: 120, Genomic Framework for Nursing Practice  

Feedback: Nurses help individuals and families learn how genetic traits and conditions are passed on within families as well as how genetic and environmental factors influence health and disease. The other answers are incorrect because in personalized medicine, nurses do not help individuals and families understand how anything influences weekly rituals or longevity. Physical factors do not influence genetics.
25. The nurse in the genetics clinic is gathering a family history. The patient has asked a question to which the nurse does not know the answer. What would the nurse know to do?  
A) Ask the geneticist for the answer  
B) Find the answer to the patient's question in the office resource books  
C) Find the answer to the patient's question on the Internet  
D) Finish the family history and conduct a health history along with physical and developmental assessments

Ans: D  
Chapter: 9  
Client Needs: A-1  
Cognitive Level: Comprehension  
Difficulty: Easy  
Integrated Process: Nursing Process  
Objective: 2  
Page and Header: 120, Genomic Framework for Nursing Practice

Feedback: All nurses should be able to recognize when a patient is asking a question related to genetic or genomic information and should know how to obtain genetics information by gathering family and health histories and conducting physical and developmental assessments. The other answers are incorrect.

26. A family history that is obtained as a nursing assessment is the first step in what?  
A) Establishing the pattern of inheritance  
B) Establishing a pedigree  
C) Answering the patient's genetic questions  
D) Answering families' relationship questions

Ans: A  
Chapter: 9  
Client Needs: A-1  
Cognitive Level: Comprehension  
Difficulty: Easy  
Integrated Process: Nursing Process  
Objective: 2  
Page and Header: 124, Integrating Genetic and Genomic Knowledge

Feedback: Nursing assessment of the patient's health includes obtaining and recording family history information in the form of a pedigree. This is a first step in establishing the pattern of inheritance. The other answers are incorrect because the pedigree is the nursing assessment. A nursing assessment of a family history does not answer the patient's genetic questions or the families' relationship questions.
27. Nurses are expected to know how to use the first genetic test. What is it?
   A) The developmental assessment
   B) The family history
   C) The physical assessment
   D) The psychosocial assessment

   Ans: B

Chapter: 9
Client Needs: A-1
Cognitive Level: Knowledge
Difficulty: Easy
Integrated Process: Nursing Process
Objective: 2
Page and Header: 128, Genetic and Genomic Technologies in Practice

Feedback: The family history is considered the first genetic test. It is expected that all nurses will know how to use this genetic tool. The other answers are incorrect because the developmental, physical, and psychosocial assessments are not the first genetic test.

28. You are the nurse documenting a family history of a patient newly diagnosed with Alzheimer's disease. What knowledge would influence your nursing considerations for genetic testing?
   A) What genetic tests are available for Alzheimer's disease
   B) What the geneticist has recommended
   C) The genetic bases of adult-onset conditions
   D) Whether or not the patient's third cousin once removed had Alzheimer's disease

   Ans: C

Chapter: 9
Client Needs: A-1
Cognitive Level: Comprehension
Difficulty: Difficult
Integrated Process: Nursing Process
Objective: 2
Page and Header: 128, Genetic and Genomic Technologies in Practice

Feedback: Knowledge of adult-onset conditions and their genetic bases (ie, mendelian versus multifactorial conditions) influences the nursing considerations for genetic testing and health promotion. The other answers are incorrect because the only form of Alzheimer's disease that has
a genetic test associated with it is the early-onset form of Alzheimer's disease. When you are doing the family history of the patient, the geneticist has not seen the patient yet so he or she would have no recommendations. The third cousin once removed is not within three generations of the patient so he or she would have no impact.

29. A couple have come to the genetics clinic for their first visit. In taking their history, the nurse learns that they are Ashkenazi Jews. What would this couple be genetically screened for?
A) Huntington disease
B) Trisomy 21
C) Alzheimer's disease
D) Canavan disease

Ans: D
Chapter: 9
Client Needs: A-1
Cognitive Level: Application
Difficulty: Moderate
Integrated Process: Caring
Objective: 3
Page and Header: 128, Genetic and Genomic Technologies in Practice

Feedback: The second aim is to provide reproductive options to people with a high probability of having children with severe, untreatable diseases and for whom genetic counseling, prenatal diagnosis, and other reproductive options could be helpful and of interest. For example, people of Ashkenazi Jewish descent (Jews of Eastern European origin) are screened for conditions such as Tay-Sachs disease and Canavan disease. The other answers are incorrect because Huntington disease, trisomy 21, and Alzheimer's disease are not associated with the Ashkenazi Jews.

30. A woman with both heart disease and osteoarthritis has come to the genetics clinic for genetic screening. What would the nurse know about these two diseases?
A) They are multifactorial.
B) They are direct result of the patient's lifestyle.
C) They are caused by a single gene.
D) They do not have a genetic basis.

Ans: A
Chapter: 9
Client Needs: B
Cognitive Level: Application
Difficulty: Moderate
Feedback: Genomic or multifactorial influences involve interactions among several genes (gene–gene interactions) and between genes and the environment (gene–environment interactions), as well as the individual's lifestyle.

31. What has served as the model for presymptomatic testing?
A) Alzheimer's disease
B) Huntington disease
C) Tay-Sachs disease
D) Sickle cell disease

Ans: B

Chapter: 9
Client Needs: D-4
Cognitive Level: Knowledge
Difficulty: Easy
Integrated Process: Nursing Process
Objective: 3
Page and Header: 131, Genetic and Genomic Technologies in Practice

Feedback: Huntington disease has served as the model for presymptomatic testing because the presence of the genetic mutation predicts disease onset and progression. The other answers are incorrect because they are not the model for presymptomatic testing.

32. Three sisters decide to have genetic testing done because their mother and their maternal grandmother died of breast cancer. Each of the sisters has the BRCA1 gene mutation. The nurse explains that just because they have the gene does not mean that they will develop breast cancer. What does the nurse explain their chances of developing breast cancer depend on?
A) Their lifestyles
B) What other gene mutations they have
C) Penetrance
D) Susceptibility

Ans: C

Chapter: 9
Client Needs: B
Cognitive Level: Application
Feedback: A woman who has the BRCA1 hereditary breast cancer gene mutation has a lifetime risk of breast cancer that can be as high as 80%, not 100%. This quality, known as incomplete penetrance, indicates the probability that a given gene will produce disease. The other answers are incorrect because lifestyles, other gene mutations, and susceptibility are not the deciding factor in getting breast cancer if you have the BRCA1 gene mutation.

33. You are seeing a patient who is going to be married in a month. There is a history of Huntington disease in her family. The genetic testing has come back and the patient has just been told she carries the gene for Huntington disease and will develop the disease when she gets older. The patient asks you if this information is confidential and if it will remain that way. You explain to the patient that her family should be told and so should her fiancé. The patient forcefully tells you “no.” She is not going to tell either her family or her fiancé. What is the nurse's best response?
A) I am ethically bound to tell your family and your fiancé.
B) Your information will remain confidential until the geneticist reviews everything. Then he will have to tell your family.
C) Have you thought about what this disease will do to the person you are going to marry and any children you may have?
D) I will respect your wishes and keep your information confidential. I do wish you would reconsider though.

Ans: D

Chapter: 9
Client Needs: C
Cognitive Level: Application
Difficulty: Moderate
Integrated Process: Caring
Objective: 3
Page and Header: 138, Applications of Genetics and Genomics in Nursing Practice

Feedback: The nurse must honor the patient's wishes while explaining to the patient the potential benefit this information may have for other family members. The other answers are incorrect because the nurse has to honor the wishes of her patient.

34. What legislation has as its purpose to protect Americans against improper use of genetic and
genomic information?
A) Genetic Information Nondiscrimination Act
B) Nondiscrimination Act for Genomic Information
C) Nondiscrimination Act of Insurance and Employment
D) Genomic Information Nondiscrimination Act

Ans: A
Chapter: 9
Client Needs: A-1
Cognitive Level: Knowledge
Difficulty: Moderate
Integrated Process: Caring
Objective: 4
Page and Header: 139, Applications of Genetics and Genomics in Nursing Practice

Feedback: Nurses need to become familiar with the Genetic Information Nondiscrimination Act (GINA), which was signed into law in 2008. Its purpose is to protect Americans against improper use of genetic and genomic information in insurance and employment decisions. The other answers are incorrect because they don't exist.

35. A Spanish-speaking couple comes in for genetic testing. They are planning to start a family and are concerned because the wife's sister has cystic fibrosis. The clinic's consent form is in English and the husband is illiterate and speaks only Spanish. The nurse does not speak Spanish. What should the nurse do?
A) Inform the patients they just needed to sign so the testing could be done.
B) Informing the geneticist that the couple cannot give informed consent.
C) Let the wife translate for her husband.
D) Explain the form to the patient in English and have him sign it.

Ans: B
Chapter: 9
Client Needs: A-1
Cognitive Level: Application
Difficulty: Moderate
Integrated Process: Caring
Objective: 4
Page and Header: 140, Applications of Genetics and Genomics in Nursing Practice

Feedback: Nurses assess the patient's capacity and ability to give voluntary consent. This includes assessment of factors that may interfere with informed consent, such as hearing loss, language differences, cognitive impairment, and the effects of medication. The nurse's best action is to inform the geneticist that the couple cannot give informed consent until a translator is available. The other answers are incorrect because just having the couple sign the form or
explaining it in English and then having them sign the form does not allow you to know that the husband understands what he is signing. The wife cannot translate for her husband because you do not know it she is translating the document correctly.

36. A patient comes to the clinic for genetic testing. The nurse asks them to sign consent forms to obtain their medical records. The patient wants to know why the geneticist needs their old medical records. What is the nurses' best response?
A) “We always get old medical records just in case we need them.”
B) “You don't have anything to hide, do you?”
C) “Your medical information is needed so that we have all the appropriate information and counseling are provided to you.”
D) “We need your medical records in case you forget to tell us something.”

Ans:  C
Chapter:  9
Client Needs:  C
Cognitive Level:  Application
Difficulty:  Moderate
Integrated Process:  Communication and Documentation
Objective:  1
Page and Header:  140, Applications of Genetics and Genomics in Nursing Practice

Feedback: Nurses obtain patient consent to obtain medical records that may be needed. Nurses explain that the medical information is needed to ensure that appropriate information and counseling (including risk interpretation) are provided. The other answers are incorrect because old medical records are not obtained “just in case”; and answer B is an inappropriate response.

37. What does the genetic analysis always include?
A) Interventions for other potentially inherited conditions
B) Evaluation of other potentially inherited conditions
C) Planning for other potentially inherited conditions
D) Assessment for any other potentially inherited condition

Ans:  D
Chapter:  9
Client Needs:  A-1
Cognitive Level:  Application
Difficulty:  Moderate
Integrated Process:  Nursing Process
Objective:  2
Feedback: The genetic analysis always includes assessment for any other potentially inherited conditions for which testing, prevention, and treatment may be possible. Interventions are not carried out for potential genetic conditions. Evaluation and planning cannot be accomplished if the patient does not have the disease.

38. After genetic testing and counseling, what can nurses do for the patient?
A) Clarify values and goals
B) Notify insurance companies of test results
C) Help the patient make a list of co-workers so they can be informed
D) Try to talk the patient into changing her decisions

Ans: A
Chapter: 9
Client Needs: A-1
Cognitive Level: Application
Difficulty: Moderate
Integrated Process: Caring
Objective: 4
Page and Header: 141, Ethical Issues

Feedback: Nurses can help patients clarify values and goals, assess understanding of information, protect patients' rights, and support their decisions. Notifying insurance companies and co-workers and trying to talk the patient into changing any decisions she makes are unethical actions on the part of the nurse.