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Instructor's Resource Manual and Test Bank for

# The Life Span: Human Development for Helping Professionals Fourth Edition

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# **PEARSON**

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# **Organizing Themes in Development**

#### **Outline**

#### I. Reflection and Action

The Gap Between Science and Practice

Box 1.1 – Examine Your Beliefs About Development

# II. A Historical Perspective on Developmental Theories

Emphasizing Discontinuity: Classic Stage Theories

Emphasizing Continuity: Incremental Change

Classic Theories and the Major Issues They Raise

# III. Contemporary Multidimensional or Systems Theories: Embracing the Complexity of Development

Applying Theory to Practice

# IV. A New Look at Three Developmental Issues

Nature and Nurture

Neuroplasticity and Critical (Sensitive) Periods

Universality and Specificity: The Role of Culture

# V. Applications

Some Rules of Thumb

# VI. Focus on Developmental Psychopathology

Box 1.2 - Prevention Science

VII. Summary

VIII. Case Study

IX. Journal Questions

X. Key Terms

# **Multiple Choice Questions**

- 1. Dr. Jones encountered a problem with a new client in therapy. Using the model of reflective practice described in Chapter 1, what is the sequence of steps he should use in order to work with this client effectively?
  - a. Reflect on what has worked best in his own personal experience and apply that knowledge to the client's problem.
  - b. Reflect on well-established theories; apply the theoretical knowledge to the individual's case; and then test out new ways of thinking about the problem if prior theory does not suffice.
  - c. Apply experience-based knowledge first, and then use theory-based knowledge.
  - d. First test out any method by subjecting it to rigorous scientific experimentation and then apply it for use with the client.
- 2. Theories of development differ from opinion primarily because
  - a. they provide a complete picture of development.
  - b. they have been proven to be true.
  - c. they are based on scientific research.
  - d. they are more abstract than opinions.
- 3. Which of the following helpers is most likely to have an implicit "incrementalist" belief about intelligence?
  - a. A counselor who recommends a strategy of academic skill building for a client who is experiencing academic problems.
  - b. A therapist who helps the client adjust to the limitations of his academic ability.
  - c. A school counselor who bases the decision about which career information to provide on the client's intelligence test results.
  - d. A counselor who develops a program to track elementary school-aged children in classes that reflect their academic achievement.
- 4. Stage theories of development typically describe \_\_\_\_\_ changes in behavior, cognition, or social relationships.
  - a. quantitative
  - b. incremental
  - c. qualitative
  - d. cumulative

- 5. Mrs. Washington is conducting her weekly group counseling session for single young adults. Karen, a lonely young professional woman, talks about feeling abandoned by her boyfriend. The other group members listen patiently and respond empathically. Mrs. Washington reflects Karen's feeling with concern and sensitivity. What would operant learning theory predict about Karen's behavior in the next group session?
  - a. Karen will be embarrassed about her past self-disclosures and feel anxious about speaking up.
  - b. Karen will not self-disclose because she fears the group will lose patience.
  - c. Karen will not self-disclose because her problems have been resolved.
  - d. Karen will speak openly because she has previously received attention and support.
- 6. Mrs. Washington is conducting her weekly group counseling session for single young adults. Karen, a lonely young professional woman, talks about feeling abandoned by her boyfriend. The other group members listen patiently and respond empathically. Mrs. Washington reflects Karen's feeling with concern and sensitivity. What would social learning theorists predict about the behavior of others in the group in the next session?
  - a. Group members will be encouraged to self-disclose after observing the positive way Karen's self-disclosure was received.
  - b. Group members will be discouraged from self-disclosing because they do not want to imitate Karen's example.
  - c. Karen's behavior will have no effect on other members of the group.
  - d. Group members will scapegoat Karen for her self-absorption.
- 7. Using Erikson's developmental theory as a framework, which of the following statements is an accurate representation of his ideas?
  - a. An individual cannot progress to a later stage unless the earlier stage has been resolved successfully and completely.
  - b. Successful progression through the stages of development depends upon effective resolution of the Oedipal crisis.
  - c. Successful resolution of a psychosocial crisis at each stage depends upon having more positive than negative experiences in the area of major concern.
  - d. Highly intelligent individuals can skip specific stages and make progress at a faster rate than other people.
- 8. Models of development which hold that change typically occurs in shifts between periods of relative stability and periods of disequilibrium are called
  - a. incremental models.
  - b. stage models.
  - c. multidimensional model.
  - d. information-processing models.

- 9. Models of development which hold that change occurs as a continuous process are called
  - a. incremental models.
  - b. stage models.
  - c. multidimensional models.
  - d. information-processing models.
- 10. Models of development which hold that change occurs as a function of reciprocal influences, both from within the person and from the external environment are called
  - a. incremental models.
  - b. stage models.
  - c. multidimensional models.
  - d. information-processing models.
- 11. In Bronfenbrenner's model, proximal processes refer to
  - a. independent changes in mental processes.
  - b. favorable developmental conditions that are more likely to exist in one particular stage of development than in another.
  - c. reciprocal interactions between an organism and its immediate environment.
  - d. indirect influences on an organism.
- 12. Juan, a 7-month-old infant, lives in a city where the availability of high quality child care is very limited. His mother is forced to leave Juan in the care of a young woman who also cares for five other infants and toddlers in her small apartment. According to Bronfenbrenner's theory, which of the following influences on Juan's development represents an example of a proximal process?
  - a. The quality of care-giving Juan receives in day care.
  - b. Juan's genetic inheritance.
  - c. State legislation regarding licensing of day care providers.
  - d. Juan's cultural and economic background.
- 13. Juan, a 7-month-old infant, lives in a city where the availability of high quality child care is very limited. His mother is forced to leave Juan in the care of a young woman who also cares for five other infants and toddlers in her small apartment. Which of the following influences represents an example of a distal process?
  - a. The sensitivity of Juan's caregiver.
  - b. Governmental policies and subsidies for child care that apply in the city.
  - c. The quality of care-giving provided by Juan's mother.
  - d. The quality and characteristics of the apartment complex in which Juan and his mother reside.

14.	Affordable, hi Which level o	Fold Juan and his mother live in a small rented apartment in a large city. In igh quality child care centers are very hard to find in her neighborhood. If the environment, according to Bronfenbrenner's model, is limiting her aquality day care in her community?  Macrosystem  Exosystem  Microsystem  Mesosystem  Mesosystem
15.	Contemporary a. b. c. d.	Is nature the most important determinant of developmental change? Is nurture the most important determinant of developmental change? Is nurture the most important determinant of developmental change? How do we explain the mechanisms by which nature and nurture interact to affect development? Why is nurture most influential at certain developmental periods?
16.	clearly in way	see eyes are covered during the first months of its life loses the ability to see as that would have been possible without the loss of early visual stimulation. mains despite later attempts to remediate the loss. This is an example of following?  Behavior genetics.  Critical period.  Plasticity.  Visual demand.
17.		cople characterized by shared traditions, attitudes, values, and beliefs handed the generation to another constitute  a socioeconomic group.  a racial group.  an ethnic group.  a cohort.
18.	The measure occupation is a. b. c. d.	of social status that combines aspects of education background, income, and called socioeconomic status. social standing. social class. economic class.

- 19. The belief that individuals create their own knowledge by interpreting new experience in the light of past experience is a fundamental proposition of
  - a. behaviorism.
  - b. rationalism.
  - c. transactionalism.
  - d. constructivism.
- 20. Keisha is a 35-year-old African-American woman who is depressed. Her presenting concerns include marital distress, the imminent possibility of losing her job, overeating, and chain-smoking. As you listen to her story, you begin to construct a picture of her developmental history. Which of these explanations would someone using a <u>stage theory</u> of development be most likely to offer for Keisha's problems?
  - a. Keisha's difficulties most likely developed through the interaction of her family experiences and societal conditions like poverty and racism.
  - b. Keisha's problems are most likely related to insufficient emotional gratification during infancy when oral needs are paramount.
  - c. Keisha's problems are most likely related to lack of appropriate models of effective marital communication.
  - d. Keisha's has experienced reward from her eating and smoking habits, and so she seeks these rewards in stressful situations.
- 21. Keisha is a 35-year-old African-American woman who is depressed. Her presenting concerns include marital distress, the imminent possibility of losing her job, overeating, and chain-smoking. As you listen to her story, you begin to construct a picture of her developmental history. Which of these explanations would someone using an incrementalist developmental perspective be most likely to offer for how Keisha's problems have developed?
  - a. Keisha's difficulties most likely developed through the interaction of her family experiences and societal conditions like poverty and racism.
  - b. Keisha's problems are most likely related to insufficient emotional gratification during infancy when oral needs are paramount.
  - c. Keisha's problems are most likely related to lack of appropriate models of effective marital communication.
  - d. Keisha's has experienced reward from her eating and smoking habits, and so she seeks these rewards in stressful situations.

22.	concerns included and chain-sm developmenta	5-year-old African-American woman who is depressed. Her presenting ude marital distress, the imminent possibility of losing her job, overeating, toking. As you listen to her story, you begin to construct a picture of her al history. Which of these explanations would someone using a onal perspective be most likely to offer for Keisha's problems difficulties? Keisha's difficulties most likely developed through the interaction of her family experiences and societal conditions like poverty and racism. Keisha's problems are most likely related to insufficient emotional gratification during infancy when oral needs are paramount. Keisha's problems are most likely related to lack of appropriate models of effective marital communication.  Keisha's has experienced reward from her eating and smoking habits, and so she seeks these rewards in stressful situations.				
23.		nust recognize the principle of: Individual pathways of may result in a wide range of possible outcomes.  equifinality hierarchical integration dysfunctionality multifinality				
24.	In <i>lifespan de</i> largely comple a. b. c. d.	the age of 18. the age of 50. death.				
25.		children's development is affected by biological factors, and that biological so affected by the environment and experience, is part of developmental stage theories incremental developmental theories social learning theories multidimensional systems theories				
26.	described as _	opment involves changes in size, efficiency, and capacity that can bechange, and shifts in forms of thought and behavior that can aschanges. quantitative / qualitative qualitative / bidirectional growth / incremental qualitative / quantitative				

- 27. An attempt to forestall the development of problems by promoting health and wellness in the general population is called
  - a. tertiary prevention.
  - b. secondary prevention.
  - c. primary prevention.
  - d. mediation.
- 28. Counselors apply multidimensional models most explicitly in their work with clients when they
  - a. recognize the primary importance of genetic influences on behavior.
  - b. consider levels of influence on the individual and select interventions that are targeted to more than one level.
  - c. pay close attention to the stage of development that characterizes the client.
  - d. understand that client's developmental tasks must be met in each stage of development.
- 29. When clinicians assess a client's presenting problem(s) in order to plan for treatment, which of the following approaches to diagnosis reflects a developmental viewpoint?
  - a. Consider those issues in a client's life which result from multifinality.
  - b. Count the number of symptoms currently manifested in order to reach a specific diagnosis.
  - c. Assess the person's level of symptomology on a checklist and assign a diagnosis only when a certain percentile has been reached.
  - d. Assess the nature of the problem by considering the person's unique history, interpersonal context, and challenges in the extrapersonal environment.
- 30. Mrs. Dubois knows that her son, Andre, is very advanced in understanding math compared to his first grade peers. However, he is rather immature in his social relationships and doesn't share or interact well with classmates. His social skills are not what his mother would expect, given his advanced cognitive development in math. Piaget's term for this variation in skills is
  - a. hierarchical organization.
  - b. decalage.
  - c. preoperational intelligence.
  - d. accommodation.

- 31. The scientific usage of the word *theory* is best described as
  - a. a proposed explanation whose status is conjectural and untested.
  - b. a personal opinion that is part of one's worldview.
  - c. a tested and supported explanation that synthesizes a large body of information to account for known facts or phenomena.
  - d. an explanation of facts or phenomena that fits with an individual's best assessment of a situation.
- 32. Gisela is a 6-year-old Peruvian girl who lives with her family on a farm in a rural village. She often helps her father take produce to a market to sell. She does not know how to read, but she understands the cost of items and can make change without errors. Sophie is a 6-year-old who lives in the US. She is in the 1<sup>st</sup> grade, is making great progress in learning to read and write, and is gaining skill in computer use. What is the best way to explain the development of these two children?
  - a. The progression of cognitive development is not universal; it is different for children in different cultures.
  - b. The processes involved in cognitive development are similar across cultures, but the specific kinds of knowledge acquired may differ depending upon children's culture.
  - c. The content of children's knowledge is similar across cultures, but the processes involved in cognitive development differ depending upon children's culture.
  - d. Cognitive development is the same for all children, regardless of culture.
- 33. Guidelines for the application of developmental research in helping professions include
  - a. keeping abreast of issues in the field and taking a multidimensional view of the influences on an individual.
  - b. always assessing the developmental stage of each client.
  - c. giving developmental theories an equal weight with your personal opinions.
  - d. recognizing that developmental stage limits therapeutic progress.

#### **Chapter 1 Essay Questions**

(See answer key for potential essay answers)

- 34. Compare and contrast stage, incremental, and multidimensional models of development. What specific contributions does each perspective make to our knowledge of development?
- 35. Create a case scenario using an example of a helping professional that describes the process of reflective practice.

- 36. Explain why having a working knowledge of development or a "developmental template" is useful to helping professionals.
- 37. In the applications section of Chapter 1, several rules of thumb are provided to guide helping professionals incorporate developmental knowledge into their work. Choose three of the guidelines and, for each of these, provide either
  - (a) a detailed and specific example of how helping professionals incorporate the guideline in a practice setting, or
  - (b) a specific and detailed example of how you will incorporate this guideline into your practice.

# Epigenesis and the Brain: The Fundamentals of Behavioral Development

#### **Outline**

#### I. The Nature-Nurture Illusion

# II. Epigenesis and Coaction

Conception and Early Growth

Defining epigenesis and coaction

The cell as the scene of the action

*Gene regulation: The heart of coaction* 

More about genes

# III. Atypical Development

The influence of defective gene alleles

The influence of chromosomal abnormalities

Teratogenic influences

Nutritional influences

# IV. The Developing Brain

Early prenatal brain development

# Box 2.1 - The Major Structures of the Brain

Structure and function of neurons

Later prenatal brain development

Postnatal brain development

# V. The Developing Stress and Adaptation System

Classic and contemporary views of stress and adaptation

# The architecture of the stress response

# VI. Applications

# Box 2.2 - Do Numbers Matter? The Relationship Between Early Stress and Later Adversity

Healthy baby guidelines

Helping the most vulnerable: Preterm and LBW babies

The healing touch

What is massage therapy?

Beyond massage therapy

VII. Summary

VIII. Case study

IX. Journal questions

X. Key terms

# **Multiple Choice Questions**

1.	Complete the	he following	analogy:	geneotype is	to phenotype as
	- · I · · · ·			6 · · · J I · · ·	· · · · · · · · · · · · · · · · · · ·

- a. gene is to chromosome
- b. DNA is to RNA
- c. code is to expression
- d. night is to day

Brown eye-color alleles are dominant over blue eye-color alleles, which are recessive. Jenna has brown eyes. Her husband, Bill, has blue eyes. Jenna and Bill are the biological parents of James, who has blue eyes. What eye-color gene alleles must Jenna have?

- a. Bb (one brown and one blue allele)
- b. BB (two brown alleles)
- c. bb (two blue alleles)
- d. BBB (three brown alleles)

Brown eye-color alleles are dominant over blue eye-color alleles, which are recessive. Jenna has brown eyes. Her husband, Bill, has blue eyes. Jenna and Bill are the biological parents of James, who has blue eyes. Jenna would be described as \_\_\_\_\_\_ of the allele for blue eyes.

- a. having the phenotype
- b. being a regulator
- c. having the genotype
- d. being a carrier

Recessive, defective gene alleles can cause hereditary disorders. It is estimated that most people carry \_\_\_\_\_\_ recessive, defective alleles in their genotypes.

- a. zero
- b. three to five
- c. hundreds of
- d. thousands of

The <u>epigenome</u> is the full set of factors, from the cell to the outside world, that controls the expression of

- a. hereditary material.
- b. recessive genes.
- c. the zygote.
- d. histones.

One epigenetic change that can affect the expression of a gene is <u>methylation</u>, which is

- a. the subtraction of an organic molecule from DNA
- b. the addition of an organic molecule to DNA
- c. the addition of RNA to DNA
- d. the effect of hormones on DNA

In one animal study of the influence of genes on behavior, offspring of rats with genes for low stress reactivity were reared by unrelated mother rats with genes for high stress reactivity.

This is an example of

- a. a survey study.
- b. a cross-fostering study.
- c. a longitudinal study.
- d. a comparative study.

In one study, young rats exposed to stress vocalized their anxiety. Their mothers, alerted to this distress, responded with diligent caregiving behavior that altered the development of the hippocampus. Which of the following processes or principles does this example demonstrate?

- a. Dominant-recessive gene relationships.
- b. Active gene effects.
- c. The role of regulator genes in behavior genetics.
- d. Epigenesis.
- 9. Based on your knowledge of prenatal development, which of the following sequences would you expect to be correct?
  - a. The heart begins to form before the hands.
  - b. The hands begin to form before the heart.
  - c. The legs begin to form before the head.
  - d. The feet begin to form before the lungs.
- 10. Which of the following statements is true about the effects of teratogens on the developing fetus?
  - a. Any given teratogen usually has the same effect regardless of when in prenatal development exposure occurs.
  - b. The kind of damage done depends on the stage of development during exposure.
  - c. A teratogen will usually have the same effect regardless of how much exposure the fetus has to that teratogen.
  - d. Ancient Greeks believed in teratogens, but modern science has been unable to identify any.

- 11. When she was pregnant with Joey, Joey's mother had a poor diet because food was in short supply in her war-torn country. The war ended after Joey was born, and his middle-class mother was able to provide him with adequate, nutritious food throughout his childhood. Which of the following outcomes is the most likely for Joey?
  - a. Joey may show few, if any, long term negative effects from his prenatal deprivation.
  - b. Joey will probably experience serious long-term cognitive deficits.
  - c. Joey will probably experience serious long-term emotional deficits, but not cognitive problems.
  - d. Joey is at greater risk of serious ongoing health problems than youngsters who have adequate prenatal nutrition.
- 12. The available data indicate that chronic maternal stress during pregnancy has which of the following effects on the fetus?
  - a. No effects
  - b. Arouses the fetus's own stress response temporarily, but has no lasting effects
  - c. Is related to newborn hyperactivity and irritability
  - d. Causes long term psychopathology
- 13. The hypothalamic-pituitary-adrenal axis (HPA axis) plays a significant role in
  - a. the human response to stress.
  - b. X-linked recessive diseases.
  - c. determining the sex of a fetus.
  - d. determining eye color.
- 14. Which of the following is an accurate description of the long-term effects of chronic stress on the body?
  - a. The ability of the immune system to fight infection and ward off disease is compromised.
  - b. There are no effects on the immune system, and only short term effects on the cardiovascular system.
  - c. There are no effects on the cardiovascular system, but long term effects on the skeletal muscles.
  - d. There are no lasting effects on the body when the stress ends all physical systems return to normal.
- 15. Ms. Dawson recently gave birth to twins, a girl and a boy. Which of the following statements about them must be true?
  - a. They share 100 per cent of their genes.
  - b. They are monozygotic.
  - c. They are dizygotic.
  - d. They originated from a single zygote.

- 16. There are 46 of these in the nuclei of human cells, they are composed of deoxyribonucleic acid.
  - a. Teratogens
  - b. Zygotes
  - c. Chromosomes
  - d. Genes
- 17. Which of the following is the best example of neuroplasticity?
  - a. Cells from the hippocampus are instrumental in encoding memories.
  - b. The 3-year-old's brain is approximately three-fourths of its adult size.
  - c. Fetal brains grow quickly, increasing in weight over the course of pregnancy.
  - d. Neurons that are transplanted from the auditory cortex to the visual cortex begin to perceive light.
- 18. Neurons communicate with each othe
  - a. by means of chemicals that are present in the spaces between them.
  - b. by means of dendrites touching other dendrites.
  - c. by means of electrical impulses that radiate out of the myelin sheath.
  - d. by means of connections with glial cells.
- 19. Fetal brains are built by neurons
  - a. that are generated by the cortex.
  - b. that migrate from the top of the brain down to the lower brain.
  - c. that migrate from the bottom of the brain up to the higher areas.
  - d. that migrate from the glial cells to the outside surface of the cortex.
- 20. Myelinization is the process which involves
  - a. neurons migrating to the temporal lobes.
  - b. separating the left and right hemispheres of the cortex.
  - c. coating the axon with a fatty sheath that improves conduction of electrical impulses.
  - d. development of the nuclei of the brain.
- 21. The brain is commonly classified into three main parts. They are
  - a. midbrain, pons, and cerebellum.
  - b. forebrain, midbrain and hindbrain.
  - c. midbrain, forebrain and cerebral cortex.
  - d. cerebellum, medulla and limbic system

- 22. The process of myelination is not completed until
  - a. well into adulthood.
  - b. middle childhood.
  - c. the end of infancy.
  - d. around age 5 or 6.
- 23. Which of the following is true with respect to the impact of nurture on the fetus' developing brain?
  - a. Fetal brain development is almost totally dependent upon the fetus' genetic inheritance because it has no environmental experience in the womb.
  - b. The development of the lower, primitive areas of the brain depend upon nature but the higher levels depend upon nurture.
  - c. Mothers can advance the fetus' intelligence significantly by speaking out loud in foreign languages during pregnancy.
  - d. The establishment of some synaptic connections in the fetal brain depends upon environmental input, like sound.
- 24. Most postnatal brain growth depends upon the proliferation of
  - a. synapses.
  - b. myelination.
  - c. neurotransmitters.
  - d. glial cells.
- 25. If you look at the karyotypes of person A and person B and discover that they look alike, what can you infer is the same about these two people?
  - a. Their parents.
  - b. Their sex.
  - c. Their height.
  - d. Their blood type.
- 26. Sally, age 28, recently married John, age 45. They would like to have a child, but they are concerned that they may be at high risk to have a child with a chromosomal abnormality, like Down's syndrome, because of John's age. What is their genetic counselor likely to tell them?
  - a. They are at higher than average risk for some chromosomal disorders because of John's age, but not for Down's syndrome.
  - b. They are at higher than average risk for chromosomal disorders of all sorts because of John's age.
  - c. There is no relationship between parents' age and chromosomal disorders in their offspring.
  - d. The risk of *any* chromosomal disorder in a child is only related to the mother's age, not to the father's age.

- 27. For most mental illnesses and behavioral disorders, like alcoholism and clinical depression, the genetic contribution can best be described as
  - a. the result of a pair of recessive, defective genes.
  - b. the result of a dominant, defective gene.
  - c. the result of a single gene mutation.
  - d. polygenic.
- 28. Symptoms of fetal alcohol syndrome (FAS) include
  - a. addiction to alcohol.
  - b. blindness and shortened limbs.
  - c. flipper arms.
  - d. widely spaced eyes and flattened nose.
- 29. Children who suffer severe protein and calorie shortages at any age may experience stunted growth, a protuberant belly, and extreme apathy. This severe starvation syndrome is called
  - a. lowest observable effect.
  - b. kwashiorkor.
  - c. Huntington's disease.
  - d. proximo-distal development.
- 30. Of the following, which is the most accurate example of coaction?
  - a. Genes that are related to a specific disorder may be expressed phenotypically only in a certain kind of environment.
  - b. Genes for a disorder that are on the X-chromosome will only be expressed in females.
  - c. The environment and the genes have an equal influence on a disorder.
  - d. Genes will have a greater influence on the development of a disorder when the genes are dominant.
- 31. Robert and Nadine both have been laid off. The couple has inadequate access to food or health care. When they realize that Nadine is pregnant, they feel desperate, and they talk to a social worker at a local clinic about their situation. The social worker is able to provide them with referrals to a food outlet, but she is unable to find a prenatal care clinic that provides free services in their neighborhood. Considering the effects of multiple risk factors, what is the most likely potential value of the social worker's efforts?
  - a. The fewer risk factors the better, so their unborn child is likely to be better off even with the limited help the social worker provided.
  - b. Their unborn child is not likely to be benefited by eliminating only one risk factor.
  - c. The unborn child might have been benefited if prenatal care were found, but improving prenatal nutrition is not important.
  - d. The health care and stress factors will only be important after the child is born.

- 32. Massage therapy for infants has been very successful in promoting weight gain and social interaction, and in decreasing distress in low birth weight infants. Based upon developmental research, what is the best explanation for this?
  - a. Infants' bodies take in more nutrients when they are touched as they nurse.
  - b. Touch is the best developed sense at birth and therefore the most effective avenue for soothing and regulating the newborn.
  - c. When the infant is massaged, its attachment to the caregiver is strengthened.
  - d. Crying and other distress is reduced because the infant is paying attention to the person giving the massage.

#### **Chapter 2 Essay Questions**

(See answer key for potential essay answers)

- 33. Genes have their effects on the proteins and enzymes produced by the cell. Yet, there appear to be genetic influences on behavior. Take some example of a behavior or a behavioral disorder, and explain how genes operating at a cellular level could have any effect at the behavioral level.
- 34. Explain why it is important for a helping professional to be aware of the coaction of genes and environment. Be sure to include a definition of coaction, with examples.
- 35. There are several principles that govern the effects of teratogens on the developing fetus. Describe these principles, giving examples.
- 36. What advice could you provide a pregnant teenager in order to help her assure the health of her baby?