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CHAPTER 2: BIOLOGICAL BEGINNINGS

Multiple Choice Questions

1. According to evolutionary developmental psychologists, many evolved psychological mechanisms are _____. That is, the mechanisms apply only to a specific aspect of a person's makeup.

- a. domain-specific
- b. maladjusted _____
- c. non-operational
- d. general purpose

Answer: a

Difficulty Level:

Easy Blooms:

Remember Page(s):

35

2. The food-scarce environment of our ancestors likely led to humans' propensity to gorge when food is available and to crave high-caloric foods—a trait that might lead to an epidemic of obesity when food is plentiful. This illustrates how:

- a. socialization influences the development of behavior and cognitive skills in human beings.
- b. evolved mechanisms are not always adaptive in contemporary society.
- c. organisms pass on characteristics they had acquired during their lifetime to their offspring.
- d. the benefits of evolutionary selection decrease with age.

Answer: b

Difficulty Level: Medium

Blooms: Understand

Page(s): 35

3. _____, the units of hereditary information, are short segments of DNA. They direct cells to reproduce themselves and to assemble proteins.

- a. Genes
- b. Chromosomes

c. RNA

d. Ribosomes

Answer: a Difficulty

Level: Easy Blooms:

Remember

Page(s):37

4. The nucleus of each human cell contains , which are threadlike structures made up of deoxyribonucleic acid (DNA).

- a. mitochondria
- b. ribosomes
- c. chromosomes
- d. mesosomes

Answer: c Difficulty

Level: Easy Blooms:

Remember Page(s):

37

5. are the building blocks of cells as well as the regulators that direct the body's processes.

- a. Genes b.

Proteins

- c. Ribosomes
- d. DNA

Answer:

b Difficulty Level:

Easy Blooms:

Remember

Page(s): 37

6. Which of the following statements about the activity of genes is true?

- a. Genes are not collaborative.
- b. A single gene codes for a single, specific protein.
- c. Genetic expression is unaffected by environmental factors.
- d. Events inside of the cell can excite or inhibit genetic expression.

Answer: d

Difficulty Level: Medium

Blooms: Understand

Page(s): 38

7. is a stage in reproduction whereby an egg and a sperm fuse to create a single cell.

- a. Fertilization
- b. Osmosis
- c. Meiosis d.

Mitosis Answer: a

Difficulty Level:

Easy Blooms:

Remember Page(s):

38

8. During the process of , the cell's nucleus—including the chromosomes—duplicates itself and the cell divides resulting in the formation of two cells.

-
- a. meiosis
 - b. osmosis
 - c. fertilization

d. mitosis

Answer: d Difficulty

Level: Easy

Blooms: Remember

Page(s): 38

9. Which of the following is true of mitosis in humans?

a. Mitosis is the cellular reproduction occurs in the sperm and egg cells.

b. Mitosis results in the formation of four new cells.

c. Mitosis results in the formation of new cells with 23 pairs of chromosomes.

d. Mitosis results in the formation of three new cells.

Answer: c

Difficulty Level: Medium

Blooms: Understand

Page(s): 38

10. A cell which contains 12 pairs of chromosomes, divides by mitosis to form two new cells. How many pairs of chromosomes does each new cell contain?

a. 12 b.

23 c. 6 d.

48

Answer: a

Difficulty Level: Hard

Blooms: Apply

Page(s): 38

11. During_____, a cell of the testes in men or ovaries in women duplicates its chromosomes and then divides twice, thus forming four cells, each of which has only half the genetic material of the parent cell.

a. meiosis

b. mitosis

c. osmosis

d. fertilization

Answer: a Difficulty

Level: Easy Blooms:

Remember Page(s):

38

12. In human beings, by the end of meiosis, each egg or sperm has _____chromosomes.

a. 46 paired

b. 23 unpaired

c. 23 paired

d. 46 unpaired

Answer: b

Difficulty Level: Easy

Blooms: Remember

Page(s): 38

13. During fertilization, an egg and a sperm fuse to create a single cell called a_____.

- a. blastocyst
- b. fetus
- c. gamete
- d. zygote

Answer: d Difficulty

Level: Easy

Blooms: Remember

Page(s): 38

14. A mistake by the cellular machinery, or damage from an environmental agent such as radiation, may produce a , which is a permanently altered segment of DNA.

- a. susceptibility gene
- b. vulnerability gene
- c. longevity gene
- d. mutated gene

Answer: d Difficulty

Level: Easy Blooms:

Remember Page(s):

39

15. _____ genes are those that make the individual more vulnerable to specific diseases or acceleration of aging.

- a. Susceptibility b.
- Longevity c.
- Vulnerability d.

Mutated Answer: a

Difficulty Level:

Easy Blooms:

Remember Page(s):

39

16. Ethel is 50-years-old but appears much more aged in appearance. Most of Ethel's relatives don't live past the age of 60. Which of the following genes are responsible for the accelerated aging that is observed in Ethel and her family members?

- a. Susceptibility genes
- b. Longevity genes c.
- Vulnerability genes d.

Mutated genes

Answer: a Difficulty

Level: Hard

Blooms: Apply
Page(s): 39

17. _____ genes are those that make the individual less vulnerable to certain diseases and be more likely to live to an older age.

a. Susceptibility b.

Longevity c.

Vulnerability d.

Mutated Answer: b

Difficulty Level:

Easy Blooms:

Remember Page(s):

39

18. Erin is 90 years old. She has relatively good health, and is fully mobile. Most of Erin's blood relatives live to a ripe, old age. Which of the following genes might be responsible for this?

a. Susceptibility

genes b. Longevity

genes c. Vulnerability

genes d. Mutated

genes Answer: b

Difficulty

Level: Hard

Blooms: Apply

Page(s): 39

19. Emma and Anna are identical twins who were adopted by different families a few weeks after birth. Although genetically identical, they grew up with different physical and psychological characteristics. For example, though both inherited a tendency to grow large, Anna was slim and athletic due to the active lifestyle practiced in her adoptive family. This variability can be explained by how:

a. each zygote is unique.

b. longevity genes can make an individual less vulnerable to certain diseases.

c. for each genotype, a range of phenotypes can be expressed

. d. mutated genes can be a source of genetic variability.

Answer: c

Difficulty Level: Hard

Blooms: Apply

Page(s): 39-40

20. _____ is the way an individual's genotype is expressed in observable and measurable characteristics.

a. RNA

b. DNA

c. Phenotype

d. Stereotype

Answer: c Difficulty
Level: Easy
Blooms: Remember

Page(s): 39

21. Marly describes her friend, Gina, as having blonde hair, green eyes, and fair skin with freckles. Marly has described Gina's_____.

- a. genotype
- b. genetic imprint
- c. phenotype
- d. X-linked inheritance

Answer: c

Difficulty Level: Medium

Blooms: Apply

Page (s): 39

22. In some cases, one gene of a pair always exerts its effects, overriding the potential influence of the other gene. This is the_____principle.

- a. sex-linked genes
- b. dominant-recessive genes
- c. genetic imprinting
- d. polygenic inheritance

Answer: b

Difficulty

Level: Easy

Blooms: Remember

Page(s): 40

23. Clark's genotype contains a dominant gene for brown eye color and recessive gene for blue eye color. According to the dominant-recessive gene principle, which of the following phenotypes is most likely to be observed in Clark?

- a. black eyes
- b. blue eyes
- c. grey eyes
- d. brown eyes

Answer: d

Difficulty Level:

Hard Blooms:

Apply Page(s): 40

24. Mary's mother has blonde hair and her father has brown hair. Mary has a gene for brown hair and a gene for blonde hair. She has brown hair. This indicates that the gene for brown hair is a(n)

- a. dominant gene
- b. recessive gene
- c. susceptible gene

d. longevity gene
Answer: a Difficulty
Level: Hard
Blooms: Apply

Page(s): 40

25. Carrie's parents both have brown hair. However, Carrie gets genes for blond hair from both parents, and as result she has blonde hair. This indicates that the gene for blonde hair is a(n):

- a. recessive gene.
- b. dominant gene.
- c. susceptibility gene.
- d. longevity gene.

Answer: a

Difficulty

Level: Hard

Blooms: Apply

Page(s): 40

26. A recessive gene exerts its influence only if:

- a. both genes in a pair are recessive.
- b. it is the stronger gene.
- c. the environment is right.
- d. the dominant gene is also present in the pair.

Answer: a

Difficulty

Level: Easy

Blooms: Remember

Page(s): 40

27. Which of the following is an example of chromosomal abnormality that occurs when whole chromosomes do not separate properly during meiosis?

- a. Down syndrome
- b. Hemophilia
- c. Huntington's disease
- d. Sickle-cell anemia

Answer: a

Difficulty Level: Medium

Blooms: Understand

Page(s): 41

28. Jason was born with Down syndrome. The doctor tells his parents that this genetic disorder occurred because he has an extra copy of chromosome 21.

- a. fragile X syndrome
- b. Klinefelter disease
- c. Down syndrome
- d. Tay Sach's disease

Answer: c

Difficulty Level: Medium

Blooms: Apply

Page(s): 41

29. Which of the following is true of Down syndrome?

- a. It primarily occurs in African American children.
- b. It occurs when genetic imprinting goes awry.
- c. Its symptoms include retardation of motor and mental abilities.
- d. It is caused by the presence of an extra copy of chromosome Y.

Answer: c

Difficulty Level: Medium

Blooms: Understand

Page(s): 41

30. Which of the following women has the highest probability of giving birth to a child with Down syndrome?

- a. Sarah, a 21-year-old Asian woman
- b. Jane, a 41-year-old Euro-American woman
- c. Ella, a 27-year-old African American woman
- e. Destiny, a 38-year-old African American woman

f. Answer: b

Difficulty Level: Hard

Blooms: Apply

Page(s): 42

31. Klinefelter syndrome affects:

- a. only males.
- b. only females.
- c. both males and females equally.
- d. more females than males.

Answer: a

Difficulty Level: Easy

Blooms: Remember

Page(s): 42

32. Tristan has a genetic disorder that results from an abnormality in the X chromosome, which becomes constricted and often breaks. His doctor told Tristan's mother that he has:

- a. Fragile X syndrome.
- b. XYY syndrome.
- c. Turner syndrome.
- d. Tay-Sach's disease.

Answer: a

Difficulty Level: Medium

Blooms: Apply

Page(s): 42

33. Angelique has a chromosomal disorder characterized by a missing X chromosome making her XO instead of XX. Angelique's doctors have diagnosed her with _____.

- a. Fragile X syndrome
- b. The XYY syndrome
- c. Klinefelter syndrome

d. Turner syndrome

Answer: d

Difficulty Level: Medium

Blooms: Apply

Page(s): 42

34. Turner syndrome occurs exclusively in:

a. females.

b. males.

c. people of Middle Eastern descent.

d. people of Jewish descent.

Answer: a

Difficulty Level: Easy

Blooms: Remember

Page(s): 42

35. Which of the following is true of phenylketonuria?

a. It results from a recessive gene.

b. It is a chromosomal disorder.

c. It results in death by 5 years of age.

d. It is caused by an accumulation of lipids in the nervous system.

Answer: a

Difficulty Level: Medium

Blooms: Understand

Page(s): 42

36. Which of the following is a gene-linked abnormality?

a. Down syndrome.

b. Phenylketonuria (PKU).

c. Turner syndrome

d. Klinefelter syndrome

Answer: b

Difficulty Level: Medium

Blooms: Understand

Page(s): 42

37. Tamera has a genetic disorder where her red blood cells take on a hook shape instead of the normal disk shape. The doctors tell Tamera's parents that she has , and that this condition also provides her with a resistance to malaria.

a. Tay-Sach's disease

b. sickle-cell anemia

c. leukemia

d. Huntington's disease

Answer: b

Difficulty Level: Medium

Blooms: Apply

Page(s): 43

38. Paul suffers from hemophilia. Suggest an appropriate treatment option for Paul's condition.

- a. Insulin
- b. Blood transfusions/injections
- c. Physical therapy
- d. Corrective surgery at birth

Answer: b

Difficulty Level: Medium

Blooms: Apply

Page(s): 43

39. Samantha has been diagnosed with _____, which is a glandular dysfunction that interferes with mucus production.

- a. cystic fibrosis
- b. Huntington's disease
- c. PKU
- d. Tay-Sachs disease

Answer: a

Difficulty Level: Medium

Blooms: Apply

Page(s): 43

40. Mary and Jim are expecting a child and prenatal diagnostic procedures have confirmed that the fetus has _____, a neural tube disorder that causes brain and spine abnormalities. Their physician has explained that this gene-linked abnormality could be treated with corrective surgery at birth, orthopedic devices, and physical or medical therapy.

- a. spina bifida
- b. Tay-Sachs disease
- c. PKU
- d. Huntington's disease

Answer: a

Difficulty Level: Medium

Blooms: Apply

Page(s): 43

41. Lindsay's body does not produce enough insulin, causing an abnormal metabolism of sugar. She is receiving insulin treatment. Lindsay has:

- a. spina bifida.
- b. hemophilia.
- c. PKU.
- d. diabetes.

Answer: d

Difficulty Level: Medium

Blooms: Apply

42. Joshua, 2, has been diagnosed with , a blood disorder that limits the body's oxygen supply and can cause joint swelling and heart and kidney failure. This genetic disorder can be treated through penicillin, pain medication, antibiotics and blood transfusions, and his doctor has indicated that a study named Baby HUG may offer a better drug in the future.

- a. spina bifida
- b. Tay-Sachs disease
- c. sickle-cell anemia
- d. Huntington's disease

Answer: c

Difficulty Level: Medium

Blooms: Apply

Page(s): 43

43. Benny has been diagnosed with a gene-linked abnormality characterized by deceleration of mental and physical development caused by an accumulation of lipids in the nervous system. He has been put on medication and a special diet, but his family has been told that he will probably not live beyond the age of five. Benny is suffering from:

- a. spina bifida.
- b. Tay-Sachs disease.
- c. phenylketonuria.
- e. Huntington's disease.

Answer: b

Difficulty Level: Medium

Blooms: Apply

Page (s): 43

44. _____ is the field that seeks to discover the influence of heredity and environment on individual differences in human traits and development.

- a. Behavior influence
- b. Behavior therapy
- c. Behavior genetics
- d. Behavior development

Answer: c

Difficulty Level: Easy

Blooms: Remember

Page(s): 44

45. Rachel loves to read books and also encourages her daughter to read by regularly taking her to the local library and buying her lots of books. Rachel's daughter is now an avid reader. This reflects a _____ correlation.

- a. passive genotype-environment
 - b. evocative genotype-environment
 - c. influential genotype-environment
 - d. active (niche-picking) genotype-environment
- Answer: a

Difficulty Level: Medium

Blooms: Apply

Page(s): 45

46. Tracy's parents are avid sports fans. Since she was a child, they took her to numerous baseball and football games, and Tracy regularly watched the sports channel with her dad. When she was old enough, her parents made her join the little league team at her school and she performed well. This is an example of a(n):

- a. evocative genotype–environment correlation.
- b. active (niche-picking) genotype–environment correlation.
- c. passive genotype–environment correlation.
- e. gene-gene correlation.

Answer: c

Difficulty Level: Medium

Blooms: Apply

Page(s): 45

47. _____ correlations occur because a child's genetically influenced characteristics elicit certain types of environments.

- a. Passive genotype–environment
- b. Evocative genotype–environment
- c. Influential genotype–environment
- e. Active (niche-picking) genotype–environment

Answer: b

Difficulty Level: Easy

Blooms: Remember

Page(s): 45

48. Charlie is a cooperative, attentive child and is a favorite at home and school and receives positive, instructive responses from adults. This is indicative of a(n):

- a. passive genotype–environment correlation.
- b. evocative genotype–environment correlation.
- c. influential genotype–environment correlation.
- e. active (niche-picking) genotype–environment correlation.

Answer: b

Difficulty Level: Medium

Blooms: Apply

Page(s): 45

49. Timothy is a quiet 6-year-old who is usually withdrawn in class. As a result, he does not receive much attention from his peers and mostly plays by himself. According to Sandra Scarr, this is an example of a(n)_____.

- a. passive genotype–environment correlation

- b. active (niche-picking) genotype–environment correlation
- c. gene x environment interaction
- d. evocative genotype-environment correlation

Answer: d

Difficulty Level: Medium

Blooms: Apply

Page(s): 45

