

HONORS PSYCHOLOGY | REVIEW QUESTIONS

The purpose of these review questions is to help you assess your grasp of the facts and definitions covered in your textbook. Knowing facts and definitions is necessary (but not sufficient) for success on formal exams, which assess your ability to conceptualize and analyze the material covered in textbook and lecture. An answer key is provided at the end of these review questions so you can check your answers.

1. Genes contribute to behavior by:
 - A) directing the manufacture of protein molecules that build and modify the body.
 - B) setting up patterns of neural activity in the brain.
 - C) breaking down large protein molecules into their amino acid “building blocks.”
 - D) counteracting environmental influences.

2. _____ form the structure of every cell of the body, and _____ control the rate of every chemical reaction in every cell.
 - A) Chromosomes; alleles.
 - B) Enzymes; structural proteins
 - C) Alleles; chromosomes
 - D) Structural proteins; enzymes

3. Which of the following is TRUE of protein production?
 - A) DNA serves as a template for producing RNA, which in turn serves as a template for producing protein molecules.
 - B) RNA serves as a template for producing DNA, which in turn serves as a template for producing protein molecules.
 - C) Both DNA and RNA serve as templates for producing protein molecules.
 - D) Protein molecules serve as templates for producing RNA, which in turn serves as a template for producing DNA.

4. Where is the DNA that contains the entire genetic code for a particular individual?
 - A) only in egg and sperm cells
 - B) within every gene
 - C) only in amino acids
 - D) in the nucleus of each of the body's cells

5. The portion of a DNA molecule that contains the code for the manufacture of one specific type of protein molecule is called a(n):
- A) gene.
 - B) chromosome.
 - C) amino acid.
 - D) RNA molecule.
6. Each protein molecule in the body is synthesized under the direction of a(n):
- A) zygote.
 - B) gene.
 - C) amino acid.
 - D) enzyme.
7. Different sequences of the roughly 20 different _____ create an essentially infinite variety of protein molecules.
- A) RNA molecules
 - B) amino acids
 - C) enzymes
 - D) genes
8. The term *phenotype* refers to:
- A) the observable properties of the body and behavioral traits.
 - B) the set of genes that an individual inherits.
 - C) those observable properties of the body and behavioral traits that are caused by the environment and not by genes.
 - D) those observable properties of the body and behavioral traits that are caused by genes and not by the environment.
9. The DNA containing an individual's genetic information is organized into structures called:
- A) chromosomes.
 - B) phenotypes.
 - C) genotypes.
 - D) zygotes.
10. The normal human cell consists of 23 pairs of:
- A) genotypes.
 - B) genes.
 - C) chromosomes.
 - D) alleles.

11. In the normal human male, the sex chromosomes consist of a(n) _____, and in the normal human female they consist of a(n) _____.
- A) XY pair; XX pair
 - B) XX pair; XY pair
 - C) YY pair; XX pair
 - D) XX pair; YY pair
12. Which of the following would be partially determined by an individual's environment?
- A) the individual's genotype
 - B) the individual's phenotype
 - C) the individual's chromosomes
 - D) None of the answers is correct.
13. Which of the following statements best describes the difference between mitosis and meiosis?
- A) Mitosis replicates egg cells and meiosis replicates sperm cells.
 - B) Mitosis is involved in sexual reproduction and meiosis is involved in body growth.
 - C) Mitosis produces cells other than egg or sperm cells and meiosis produces egg or sperm cells.
 - D) Mitosis involves two cell divisions and meiosis involves one.
14. Which process results in the faithful duplication of genetic material?
- A) genotyping
 - B) phenotyping
 - C) mitosis
 - D) meiosis
15. The genetic material in the four egg or sperm cells produced from a single precursor cell through the process of _____ is _____.
- A) mitosis; identical
 - B) mitosis; different
 - C) meiosis; identical
 - D) meiosis; different
16. The union of an egg and a sperm produces a(n):
- A) phenotype.
 - B) zygote.
 - C) allele.
 - D) chromosome.

17. When a human sperm and egg unite, the resulting zygote:
- A) combines all of the genes of the biological mother and father.
 - B) contains 23 paired chromosomes, one member of each pair coming from each parent.
 - C) contains 23 X chromosomes from the mother and 23 Y chromosomes from the father.
 - D) contains half of the full number of chromosomes found in a normal adult cell.
18. Which of the following statements regarding twins is FALSE?
- A) Identical twins originate from a single zygote.
 - B) Fraternal twins are no more genetically related than nontwin siblings.
 - C) Identical twins are more closely related than fraternal twins.
 - D) Fraternal twins originate when one egg is fertilized by two sperm.
19. Fraternal twins originate from:
- A) two sperm cells and two egg cells.
 - B) two sperm cells and one egg cell.
 - C) one sperm cell and two egg cells.
 - D) one sperm cell and one egg cell.
20. _____ twins originate from one zygote that separates into two bundles of identical cells, and _____ twins originate from two zygotes, formed from two different egg and sperm cells.
- A) Monozygotic; dizygotic
 - B) Heterozygous; homozygous
 - C) Dizygotic; monozygotic
 - D) Homozygous; heterozygous
21. If the paired genes at a given locus are the same, the person carrying them is said to be _____ at that locus.
- A) homozygous
 - B) heterozygous
 - C) genotypic
 - D) phenotypic
22. Two genes that occupy corresponding locations on a pair of chromosomes are called:
- A) homozygotes.
 - B) monozygotes.
 - C) alleles.
 - D) mitochondria.

23. If the two genes that occupy corresponding locations on a pair of chromosomes are different, we say the individual carrying them is _____ at that location.
- A) monozygotic
 - B) dizygotic
 - C) homozygous
 - D) heterozygous
24. The two members of a gene pair are called:
- A) alleles.
 - B) dominant genes.
 - C) enzymes.
 - D) zygotes.
25. An allele is said to be dominant when it produces its observable effects:
- A) only in the heterozygous condition.
 - B) only in the homozygous condition.
 - C) in both the heterozygous and homozygous conditions.
 - D) in neither the heterozygous nor homozygous condition.
26. A gene that produces its observable effects in either the homozygous or the heterozygous condition is:
- A) regressive.
 - B) recessive.
 - C) dominant.
 - D) monozygotic.
27. A gene that produces its observable effects only in the homozygous condition is called:
- A) dominant.
 - B) crossed.
 - C) backcrossed.
 - D) recessive.
28. Which of the following statements about dominance and recessiveness is TRUE?
- A) A dominant gene will express itself only in the heterozygous condition.
 - B) A given gene can be dominant in one individual and recessive in another.
 - C) A recessive gene cannot be expressed under any circumstances.
 - D) Some pairs of alleles do not involve a dominant/recessive pattern but rather blend their effects.

29. If we observe that a given characteristic varies in a continuous fashion, we can presume that the trait is affected by:
- A) environment and not genes.
 - B) a single gene.
 - C) an unmatched pair of alleles.
 - D) many genes.
30. Polygenic characteristics like aggressiveness in mice and conscientiousness in people typically approximate a normal distribution, meaning that:
- A) the frequency of occurrence for such a characteristic is low, with most individuals never developing the characteristic.
 - B) the frequency of occurrence for such a characteristic is high, with only a small proportion of individuals who do not develop the characteristic.
 - C) most individuals fall near the middle of the range of scores for these characteristics and the frequency tapers off toward the two extremes.
 - D) roughly equal numbers of individuals have low, middle and high scores on such a characteristic.
31. If a trait varies in a continuous, graded manner among different individuals, then it is probably a:
- A) polygenic trait.
 - B) recessive trait.
 - C) dominant trait.
 - D) trait that is influenced solely by the environment and not by genes.
32. When the genetic influence on a given characteristic comes from the combined effect of many genes, we say that characteristic is:
- A) dominant.
 - B) polygenic.
 - C) heterozygous.
 - D) Mendelian.
33. How did Tryon address the potential criticism that the behavior of “maze bright” and “maze dull” rats might be due to learning rather than to genes?
- A) He tested the rats in the maze at an early age, before they had acquired learned behaviors.
 - B) He raised all the rats together, so that the two strains intermingled.
 - C) He demonstrated that the rats in each group were all genetically identical to one another.
 - D) He raised some of the offspring from each strain using mothers from the other strain.

34. Natural selection is the process by which:
- A) a species becomes adapted to its environment.
 - B) nature achieves its long-term goals.
 - C) an individual adapts to its own environment.
 - D) a breeder creates desirable strains of plants or animals.
35. Which of the following statements concerning mutations is FALSE?
- A) Mutations are errors that arise in the course of DNA replication.
 - B) Mutations are invariably harmful.
 - C) Mutations are the ultimate source of all genetic variation.
 - D) Harmful mutations can be removed from the gene pool through natural selection.
36. Some early scientists argued that if a beaver's tail became flatter and wider as a result of constantly using it to slap mud onto dams, that the beaver could pass its relatively flat, wide tail to its offspring. That argument is called _____, and it has since become _____.
- A) natural selection; the basis for understanding evolution
 - B) artificial selection; the basis for selective breeding
 - C) environmental inheritance; the basis for studies of ethology
 - D) the inheritance of acquired characteristics; discredited based on our understanding of genes
37. The inheritance of acquired characteristics:
- A) is possible in any species.
 - B) is possible only in comparatively simple forms of life.
 - C) was considered impossible by Darwin, but today is recognized as a lawful mechanism of evolution.
 - D) is considered impossible in light of current knowledge of genetics.
38. Ultimate and proximate explanations of behavior:
- A) pertain respectively to the genetic and environmental influences of that behavior.
 - B) are necessarily incompatible with one another.
 - C) answer different types of questions, one concerning the behavior's role in survival and reproduction, the other concerning the physiological mechanism underlying the behavior.
 - D) offer a functional explanation, the former dealing with individual change, the latter with environmental change.

39. A behavior that does not make adaptive sense now but would have been adaptive given environmental conditions in earlier times is called a(n):
- A) homology.
 - B) analogy.
 - C) side effect.
 - D) vestigial characteristic.
40. An example of a vestigial characteristic is the:
- A) strong grasp reflex in premature human infants.
 - B) eyebrow flash in humans.
 - C) silent bared-teeth display in chimpanzees.
 - D) hive-building of honeybees.
41. Genetic drift is a:
- A) chance change in the gene pool.
 - B) correlate of environmental change.
 - C) result of natural selection.
 - D) function of biological preparedness.
42. When Ekman and his colleagues showed photographs from their atlas of facial expressions to individuals from many different cultures, the researchers found that:
- A) people in every culture, even very isolated ones, identified the facial expressions in the same way Americans did.
 - B) people in non-Western cultures identified the depicted emotions differently from those in Western cultures.
 - C) there was widespread agreement only on the expressions of happiness and anger.
 - D) there was widespread disagreement over the meaning of all the depicted emotional expressions.
43. A similarity between species that arises not because of common ancestry but because of similarities in the species' habitats or lifestyles is called a(n):
- A) side effect.
 - B) analogy.
 - C) homology.
 - D) environmental convergence.

44. To infer the evolutionary pathway of hive-building behavior of honeybees, Darwin used:
- A) homologies.
 - B) analogies.
 - C) proximate explanation.
 - D) selective breeding.
45. Darwin's study of hive-making behaviors in honeybees used comparison by _____ to demonstrate how a complex behavior like hive building could come about through _____.
- A) analogy; natural selection
 - B) homology; artificial selection
 - C) natural selection; analogy
 - D) homology; natural selection
46. In what way does a happy smile differ from the other form of human smile, the greeting smile?
- A) It lasts longer.
 - B) It begins more quickly.
 - C) It involves the eye area.
 - D) It is performed by the mouth alone.
47. The silent bared-teeth display in chimpanzees signals _____ and provides a homology for understanding the evolution of _____.
- A) submission; the smile of greeting
 - B) aggression; human laughter
 - C) submission; the human frown of sadness
 - D) aggression; the human grin of defiance
48. The relaxed open-mouth display in primates often occurs during _____ and is thought to be related to human _____.
- A) serious aggression; anger
 - B) serious aggression; submission
 - C) mock-aggressive play; laughter and smiles of happiness
 - D) mock-aggressive play; language

49. Van Hooff believed that the human smile of greeting is homologous to a facial display that in chimpanzees is shown:
- A) most often by the more submissive of two chimpanzees in a tense situation.
 - B) most often by the more dominant of two chimpanzees in a tense situation.
 - C) about equally by the more submissive and the more dominant of two chimpanzees upon meeting.
 - D) most often by chimpanzees that are relaxed and friendly during play time.
50. In which of the following mating systems does an individual female mate with more than one male while an individual male mates with only one female?
- A) polygyny
 - B) polyandry
 - C) polygynandry
 - D) monogamy
51. According to Robert Trivers, which of the following mating systems is related to high female and low male parental investment?
- A) monogamy
 - B) polygyny
 - C) polyandry
 - D) all three mating systems
52. Helping another animal while decreasing ones own survival or reproductive chances is called:
- A) dominance.
 - B) altruism.
 - C) cooperation.
 - D) nepotism.
53. Altruism is best defined as any act that:
- A) helps another while at the same time decreasing one's own chance of survival or reproduction.
 - B) helps another while at the same time increasing one's own chance of survival or reproduction.
 - C) hurts another while at the same time decreasing one's own chance of survival or reproduction.
 - D) hurts another while at the same time increasing one's own chance of survival or reproduction.

54. Kin selection theory was developed to explain why ____.
- A) animals help close relatives.
 - B) animals sometimes become less aggressive when they enter territory marked by another animal.
 - C) animals choose the fittest mate available.
 - D) animals cooperate with other species.
55. The kin selection theory of altruism is designed to explain:
- A) the role that learning plays in the development of altruism.
 - B) how apparent acts of altruism can be consistent with the principle of evolution by natural selection.
 - C) why highly aggressive animals are more likely to show altruism than are less aggressive animals.
 - D) why highly aggressive animals are less likely to show altruism than are less aggressive animals.
56. Reciprocity theory is used in the explanation of:
- A) aggression and dominance within a group.
 - B) the evolution of promiscuity.
 - C) the evolution of monogamy.
 - D) apparent acts of altruism.
57. A person falls prey to the naturalistic fallacy by mistakenly equating what is “natural” with what is:
- A) genetically based.
 - B) inevitable.
 - C) right.
 - D) effective.
58. The belief that behavior is controlled by genes and is not much affected by environment, including one's culture, is referred to as the ____ fallacy.
- A) deterministic
 - B) naturalistic
 - C) foresight
 - D) nepotistic

Answer Key - GenesEvo Review

1. A
2. D
3. A
4. D
5. A
6. B
7. B
8. A
9. A
10. C
11. A
12. B
13. C
14. C
15. D
16. B
17. B
18. D
19. A
20. A
21. A
22. C
23. D
24. A
25. C
26. C
27. D
28. D
29. D
30. C
31. A
32. B
33. D
34. A
35. B
36. D
37. D
38. C
39. D
40. A
41. A
42. A
43. B
44. A
45. D
46. C
47. A
48. C
49. C
50. B
51. B
52. B

- 53. A
- 54. A
- 55. B
- 56. D
- 57. C
- 58. A