

BIO270
Sample Test Questions: 2011

1. Which of the following is an example of how chemical laws affect physiology?
 - a) An organism is able to jump higher based on the attachment point of its muscles to its skeleton
 - b) An increase in pressure difference will increase the flow through the system.
 - c) An increase in pH (fewer H⁺) will change the interaction of bonds holding proteins together
 - d) Answers a, b, and c are correct
 - e) There are no examples because chemical laws have no effect on physiology

2. When indirect signaling is used, the target cell responds to the signal when that chemical
 - a) binds to any enzyme
 - b) binds to a receptor p94
 - c) binds to a gene
 - d) binds to the nuclear membrane
 - e) binds to another hormone

3. Being a conformer is beneficial because
 - a) It is possible to maintain a stable environment
 - b) It consumes less energy than being a regulator
 - c) It allows an organism to live in a wide range of environments that differ from its internal environment
 - d) All of the above
 - e) None of the above

4. The phenotypic expression of a genotype can be altered by
 - a) Developmental processes
 - b) Physiological processes
 - c) Environmental processes
 - d) All of the above
 - e) None of the above

5. Organisms that are closely related to each other will
 - a) Share some features with all other organisms
 - b) Share some features only with organisms from this same group
 - c) Have no features in common with any other organisms
 - d) Have identical phenotypes but not genotypes
 - e) Both a and b

6. The correct term (s) for the most abundant liquid in which other molecules are dissolved is/are

- a) Solvent
- b) Solute
- c) Solution
- d) Salvation
- e) Both a and c

7. A chemical is termed a neurohormone when it is

- a) released by a neuron but travels in the blood like a hormone
- b) released by an endocrine gland but binds to receptors on a neuron
- c) released by neurons and endocrine glands.
- d) known to be involved with communication but scientists have not concluded which system used it.
- e) comprised of an amino acid chain

8. Which of the following choices is not a basic feature of cellular communication

- a) The signal must be produced
- b) The signal can be produced only by a eukaryote
- c) The signal must be transported to a target cell
- d) The target cell must respond to the signal
- e) The target cell possesses a specific receptor

9. Which of the following is a monosaccharide?

- a) Sucrose
- b) Lactose
- c) Glucose
- d) Maltose
- e) Allotose

10. Glycerol molecules connected to three fatty acids are termed

- a) Monoacylglycerides
- b) Diacylglycerides
- c) Triglycerides
- d) Cholesterol
- e) Polypeptides

11. _____ is a generalized carrier protein that plays a major role in vertebrate blood.
- a) globulin
 - b) albumin
 - c) hemoglobin
 - d) cholesterol
 - e) transferrin
12. Which domain of intracellular receptors bind to responsive elements in the nucleus?
- a) DNA-binding domain
 - b) Transactivation domain
 - c) Ligand-binding domain
 - d) Membrane-binding domain
 - e) Functional domain

Answers

- 1. C page 10
- 2. B page 94
- 3. B page 12
- 4. D page 13-14
- 5. E page 16
- 6. A page 27
- 7. A page 95
- 8. B page 91
- 9. C ref 46
- 10. C page 54
- 11. B page 99-100
- 12. A page 111

2011 More Sample questions

Tonicity is

- a) The ability of a solution to induce water to diffuse across a membrane
- b) The ability of salt to dissolve into a particular solvent
- c) The attraction of between water molecules and proteins
- d) The effect of a solution on cell volume
- e) None of the above

Answer: D

Which of the following statements is true about phenotype?

- a) After an initial development period, phenotype of an organism is static.
- b) Phenotype is affected by organisms at the biochemical level only.
- c) Altering phenotype allows an organism to change its physiological response
- d) Genotype may influence phenotype, but phenotype never affects genotype.
- e) In adult animals phenotype is identical to genotype.

Answer: C

The term adaptation most commonly refers to

- a) Changes within an individual that are irreversible
- b) Changes within an individual that are reversible
- c) Changes within a population seen over time
- d) Changes within an individual that cannot be inherited
- e) Changes in an adult individual during their lifetime

Answer: C

One approach, known as _____, says that we can learn about one level of organization by studying the functions of the level below it.

- a) Reductionism
- b) Emergence
- c) Systematics
- d) Bioinformatics
- e) Physiology

Answer: A

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Answer C

When maintaining homeostasis, it is important to do all of the following, EXCEPT

- a) Detect external conditions
- b) Control external conditions
- c) Generate compensatory responses to the changes
- d) Protect vital areas for damaging changes
- e) Integrate the responses for internal and external conditions

Answer B

Release of hormones from the posterior pituitary gland is an example of a

- a) First order endocrine pathway
- b) second order endocrine pathway
- c) third order endocrine pathway
- d) four order endocrine pathway
- e) a or b depending on the hormone released

Answer: A

The general structure of a tryglyceride includes

- a) 3 glyceride units bound to a phospholipid
- b) 2 glycerol units bound with a sphingosine
- c) 1 glyceride unit bound to 3 sphingosine units
- d) 1 glycerol unit bound to 3 fatty acids
- e) 3 glycerol units bound to 3 fatty acids

Answer: D

What three signalling molecules from the hypothalamus regulate the release of prolactin from the pituitary gland

- a) Gonadotropin-releasing hormone, Prolactin-releasing hormone, and somatostatin
- b) prolactin-releasing hormone, Prolactin-inhibiting hormone, and somatostatin
- c) Gonadotropin-releasing hormone, Prolactin-inhibiting hormone, and thyrotropin-releasing hormone
- d) prolactin-releasing hormone, Prolactin-inhibiting hormone and thyrotropin-releasing hormone
- e) Gonadotropin-releasing hormone, Prolactin-releasing hormone and thyrotropin-releasing hormone

Answer D

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