

Biology 251
October 2009
PRACTICE Exam Two

Bold = 2 pt answer *Italics* = 1/2 pt answer

1. The brain stem
 - a) *controls the cardiovascular, respiratory, and digestive systems*
 - b) *is the critical connecting link between brain and spinal cord*
 - c) suppresses useless movement patterns
 - d) both a and b**
 - e) both b and c
2. The blood brain barrier
 - a) *shields the brain from changes in blood composition*
 - b) depends on gap junctions in brain capillaries
 - c) *depends on tight junctions in brain capillaries*
 - d) both a and b
 - e) both a and c**
3. The part of the brain most involved in regulating homeostasis is
 - a) The brain stem
 - b) The cerebellum
 - c) The cerebral cortex
 - d) The hypothalamus**
 - e) The basal nuclei
4. Which of the following is NOT one of the primary tastes?
 - a) bitter
 - b) spicy**
 - c) salty
 - d) sweet
 - e) sour
5. When an afferent receptor that is a separate cell receives a stimulus, _____ enters the cell
 - a) Ca^{++}**
 - b) Na^+
 - c) K^+
 - d) Cl^-
 - e) H^+
6. which causes a chemical messenger to exit the receptor cell and bind to the afferent axon, which causes _____ to enter the axon and the membrane to _____.
 - a) Ca^{++} ; depolarize
 - b) Na^+ ; depolarize**
 - c) Na^+ ; hyperpolarize
 - d) Ca^{++} ; hyperpolarize
 - e) Neurotransmitter ; depolarize

7. The parasympathetic nervous system
- Is part of the afferent nervous system
 - Is completely shut down anytime the sympathetic nervous system is operating
 - Up regulates motility of the GI tract**
 - Up regulates heart activity
 - Both b and c are true
8. Which of the following statements about the autonomic nervous system is false?
- Every autonomic pathway consists of a two neuron chain
 - The cell body of the first neuron in each autonomic pathway lies in the CNS
 - Acetylcholine is released by the second neuron in every autonomic pathway**
 - The parasympathetic nervous system is used primarily for routine housekeeping duties
 - None of the above are false
9. Place the following events of emission and expulsion in the male sexual cycle in the correct order:
- Pressure inside penis increased
 - Sperm leave testis
 - Skeletal muscle at base of penis contract at 0.8 second intervals
 - Sympathetic nervous system causes smooth muscle in penis and scrotum to contract
 - Semen forcibly expelled
 - Urethra fills with semen
- 4-2-6-3-1-5**
 - 2-1-5-3-6-4
 - 1-2-3-4-5-6
 - 4-2-1-5-3-6
 - 5-3-2-4-1-6
10. Which of the following statements about the endocrine system is true?
- The endocrine systems tends to control activities that require duration, not speed*
 - A single target cell can be influenced by more than one hormone*
 - A single hormone may be produced by more than one endocrine gland*
 - A single endocrine gland may produce more than one hormone*
 - All the above are true**
11. Which of the following statements about tropic hormones is true?
- A tropic hormone acts on another endocrine gland and causes it to release its hormone**
 - Epinephrine is a tropic hormone
 - All lipophilic hormones are tropic hormones
 - Both a and b are true
 - Both and c are true
12. Which of the following statements about hydrophilic hormones is true?
- They can dissolve in plasma*
 - They function by initiating second messenger systems in target cells.*
 - They function by causing channels in the cell membrane of target cells to open*
 - All the above are true**
 - Only a and c are true

13. Sperm production is directly stimulated by
- a) *Testosterone*
 - b) **GnRH**
 - c) **LH**
 - d) *FSH*
 - e) **Both a and d**
14. Which of the following statements about regulation of thyroid hormones is true?
- a) TSH positively feeds back on the hypothalamus causing TRH release
 - b) *T3 and T4 negatively feed back on the pituitary to reduce TSH release*
 - c) *T3 and T4 negatively feed back on the hypothalamus to reduce TRH release*
 - d) TRH negatively feeds back on the hypothalamus to reduce TSH release
 - e) **Both b and c are true**
15. Menstruation occurs because
- a) *Estrogen levels decline sharply at the end of luteal phase*
 - b) *Progesterone levels decline sharply at the end of the luteal phase*
 - c) *The corpus luteum disintegrates and no longer produces its hormones*
 - d) **All the above are true**
 - e) Only a and b are true