

**HSS 307: Human Physiology ANSWER KEY**

**Quiz 5**

Name \_\_\_\_\_

Please circle the correct response(s). There may be 0-4 correct responses.

1. The portal system linking the hypothalamus and pituitary gland:
  - a. Prevents oxytocin and ADH from being diluted on the way to the posterior pituitary gland (P.149 AND 152, OXYTOCIN AND ADH ARE INDEED PART OF THE POSTERIOR PITUITARY ROUTE, BUT IT HAS NO HYPO – PIT – PORTAL SYSTEM)
  - b. Moves tropic hormones from the hypothalamus to target cells in the anterior pituitary (P.152 AND FIG. 6.4)
  - c. Allows the release of anterior pituitary hormones into arterial circulation (FIG. 6.4, VENOUS, NOT ARTERIAL)
  - d. Like the connection between the hypothalamus and the other side of the pituitary gland, utilizes neurohormones in the pathway that ultimately results in a pituitary hormone secretion (P.149 AND FIG. 6.4, NEUROHORMONE IS A HORMONE SECRETED BY A NEURON)
  
2. The anterior pituitary and posterior pituitary glands share these characteristics:
  - a. Endocrine target cells within the gland (FIG.6.4; ONLY THE ANT PITUITARY DOES)
  - b. Site of hormones secreted into capillaries from specialized neurons (FIG.6.3, 6.5; HORMONES CAN ONLY BE SECRETED THRU CAPILLARIES AND BOTH HAVE NEUROSECRETORY CELLS SECRETING HORMONES INTO CAPILLARY BEDS WITHIN THE GLAND)
  - c. Secretion of releasing hormones (P.152 AND FIG.6.5; ONLY THE HYPOTHALAMUS SECRETES RELEASING HORMONES)
  - d. Site of hormone synthesis (FIG.6.3 AND 6.4; NOT THE POSTERIOR PITUITARY WHICH SECRETES HORMONES SYNTHESIZED IN THE HYPOTHALAMUS)
  
3. Insulin, unlike glucagon:
  - a. Has a significant effect on transport of nutrients across cells of the central nervous system (P.615; ALMOST VERBATIM – IT DOES NOT)
  - b. Is stimulated by an increase in plasma amino acids (P.617; BOTH ARE)
  - c. Has a significant effect on glucose uptake in exercising muscle (P.615; ALMOST VERBATIM – IT DOES NOT)
  - d. Stimulates glycogenolysis (FIG.21.5 AND 21.6; INSULIN STIMULATES GLYCOGEN SYNTHESIS, GLUCAGON STIMULATES GLYCOGENOLYSIS)