BOYLE - COGS17 - Study Guide and HW 2-Part D- Sexual Dimorphic and Hypothalamus Worksheet.

PID: _____ Name: (Last)_____ (First)_____ Date: ____

Answer	Definition	General Principle
	How do male and female brains differ?	Sexual dimorphism
	What is the shorebird sexual size dimorphism? When does one see greater differences between males and females?	Relationship between size and behavior.
	What are the differences and similarities between the two species of voles and birds that cache nuts? How do those differences manifest in their spatial abilities?	Anatomical specialization associated with behavioral needs.
	What are the “nature” driving and consequential factors associated with gender determination?	Factors of gender determination
	What are the “nurture” driving and consequential factors associated with gender determination?	
	Compare and contrast point to point synaptic communication with hypothalamic neurosecretory neurons.	Neuronal physiology
	What role does the ANS have? Which structure is responsible to activate the ANS? How are the ANS neurons connected?	Role of ANS
	Describe how the hypothalamus integrates somatic and visceral information. Provide an example.	Hypothalamic role in bridging systems
	What are the three functional zones of the hypothalamus?	
	Describe three functions associated with the periventricular zone?	The range of functions associated with the hypothalamus - in particular, the periventricular zone.

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	These large cells neurons, extend axons down towards the stalk of the posterior lobe of the pituitary and secrete oxytocin and vasopressin	Hypothalamic circuitry and specialized neurons
	What is the thirst pathway?	Homeostasis regulation and feedback
	How does the hypothalamus communicate with the anterior pituitary? Be sure that your answer explains the release of the hypophysiotropic hormones into the hypothalamo-pituitary portal.	Hypothalamic endocrinology
	How does the hypothalamus (parvocellular neurosecretory cells) control stress - at the adrenal cortex level)? What is the cortisol pathway?	Regulation of stress by the hypothalamus
	Illustrate the differences between the somatic and autonomic nervous systems. Include in your diagram: 1. CNS → targets 2. Location XMTR of somatic, pre- and post-ganglionic cells 3. Type of pathway - monosynaptic vs. disynaptic	Physiology and Anatomy

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	____ hypothalamus controls the parasympathetic system, while the ____ hypothalamus controls the sympathetic nervous system.	
	The _____ division of the ANS control organs that exit at the cranial and sacral spinal cord levels, while the ____ division exits at the thoracic and lumbar levels.	
	_____ in the medulla is connected with the hypothalamus to integrate sensory information from internal organs and to coordinate output to autonomic brain stem nuclei.	
	The axons from the neurons located in the locus coeruleus release ___. This neuromodulator is involved with regulating _____. It is activated when _____ stimuli are present.	
	How do insulin and glucagon regulate blood glucose levels?	Metabolic Homeostasis
	What is TOFI? Who is at risk? How are they identified? What is the consequence?	
	What is the clinical significance between hyperplastic adipocytes (more adipocytes) and hypertrophic adipocytes (enlarged)?	

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	What might be a benefit of intermittent fasting in terms of insulin release?	Clinical intervention for T2D and metabolic syndrome
	Discuss and describe the effects of antiandrogen and androgen exposure prenatally in the spinal nucleus of the bulbocavernosus.	Hormone effect on the anatomical structure during a critical developmental period.
	What region of the hypothalamus, when stimulated, will elicit male sexual behavior? How is this region different in male and female brains.	Hypothalamus, SDN
	Describe and discuss the role and effect of vasopressin and oxytocin during bonding behaviors. Do levels of oxytocin predict affiliative behaviors?	Hormonal effects on behavior.