**AP Biology 2019 Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ # \_\_\_\_\_\_\_**

**Study Guide Unit 8: Communication #2** (\*may not be all inclusive)

Study your lecture notes/PPts, worksheets and your book until you know everything very well. Also, SEE THE OTHER REVIEW SUPPLEMENT. Make sure you can answer the following:

1. Explain in detail how a cell creates an action potential. Distinguish between: Polarization, Depolarization, repolarization, hyperpolarization
2. Explain how a cell goes back to resting potential. What is the internal voltage of a cell at resting potential?
3. Explain how a pre-synaptic cell releases neurotransmitters, how they travel across the synapse, and how they are received by the post-synaptic cell.
4. Explain the role of Schwann cells and myelin in neuron transmission (saltatory propagation/conduction).
5. Define a sensory neuron, a motor neuron. Be familiar with interneuron (they are in the CNS, meaning the brain & spinal cord, and are the ‘integration’ neuron between sensory and motor neurons).
6. What is ACh (acetylcholine)? How is it used?
7. How does an inhibitory synapse work in the opposite way that an excitatory synapse works?
8. What is the difference between chemoreceptors and thermoreceptors?
9. Explain the difference between a neurotransmitter, a local signaling molecule, a hormone and a pheromone. Give an example of each and what it does.
10. Explain how a steroid hormone and a peptide hormone can affect a target cell differently.
11. Explain how the hypothalamus and the pituitary work together to receive info via the nervous system and send out info via the endocrine system.
12. Name and describe one hormone released from the posterior pituitary and three released from the anterior pituitary. \*\*You will NOT be tested on which hormone came from which part of the pituitary
13. Understand the feedback mechanism of calcitonin and parathyroid (PTH) hormone in maintaining blood calcium levels.
14. Understand the function of the pancreas – especially the endocrine function (relationship of insulin and glucagon in controlling blood sugar levels and feedback control).
15. What is the difference between exocrine and endocrine?
16. Understand how a Protein or Peptide hormone causes a signal transduction mechanism that often triggers a second messenger. What chemical is usually the second messenger? How does a steroid hormone initiate signal transduction?
17. Understand 1st, 2nd, and 3rd lines of defense – AKA innate and adaptive/acquired immunity. Give two examples of each type of immunity.
18. Understand passive vs active immunity. Give example of each.
19. Know the names and the functions of the different white blood cells (leukocytes and lymphocytes) derived from the 1st multipotent stem cell (diagram in 1st immune ppt).
20. Where does a B cell mature? T cell?
21. Differentiate: humoral response vs. cell mediated response.
22. Define primary versus secondary immune response. What cells and activities make the secondary response so much stronger and faster?
23. Explain the crucial role of memory cells and how a vaccine works to provide us with immunity to diseases.
24. How does a helper T cell affect both humoral response and cell mediated response?
25. How does the action of Cytotoxic T cells and B cells differ?
26. Understand the effect of the HIV virus on the immune system.
27. Relate the endocrine system and feedback control.
28. Review hormones that are agonists/ antagonists.
29. What type of receptors are insulin receptors?
30. How does insulin enable glucose to enter the cell?
31. Why does an endocrine system, rather than a nervous system, suffice in plants?
32. Give examples of tropisms.
33. Go over the (3) major plant hormones and their primary targeted effects.
34. Animal behavior? As of today, I’m still uncertain if we need to go over this.
35. Make sure that you have done the questions given for each chapter on masteringbiology.com. HIGHLY Suggested: Practice Quizzes and Tests (study area).