

Study Guide for the Final Exam: Biology

(the common questions)

Note and Disclaimer: This is a study guide, and in no way would it be possible to include every single solitary item that could be asked on the final exam. **This document is a courtesy!** The final exam will include the material covered in the second semester. **Honors Biology Classes will be responsible for all SAT II subject areas covered throughout the semester.** Reflect on the areas of biology that you learned and spend more time on those areas that seem less familiar. **Use your notes to help you study.** Studying in groups **may** help if you actually talk about Biology and test each other. Hold each other accountable and assess truly what each of you knows and does not know. No single technique is guaranteed to work, so employ multiple techniques to see what works best for you. This includes study groups, flashcards, recopying notes, recopy pictures in the textbook, reviewing powerpoints online, and repetition, repetition, repetition. Practice makes Permanent! So practice the right information.

1. What is the Central Nervous System?
2. What is the Peripheral Nervous System?
3. Stressful situations can activate the “fight or flight” response. Describe how the nervous and endocrine systems are involved in a stressful situation like taking a test, or better yet, being chased by a lion, ‘cause, you know the other day I was chased by a lion, and it was scary! Anyway, back to your study guide people!
4. Draw a small “concept map” using the following words: gland, chemical, organ, tissue, blood, changes
5. What is homeostasis?
6. Describe how glucose is kept in balance? What hormones control this?
7. Describe how your body would respond to changes in temperature on a hot day or during and intense workout. Begin your paragraph with a person starting at 98.6, normal body temperature and describe what changes occur when they become hot, from a sunny day or intense exercise. How does the body cool itself down?
8. What is a neurotransmitter? How does it work?
9. What makes neurotransmitters?
10. What is the autonomic nervous system? What organs are directly affected by it?
11. What is the peripheral nervous system? How is the body affect by that ?
12. Describe what happens in a reflex arc. Think about the different cells involved. What are they?
13. List the steps of a reflex arc in order 1,2,3...
14. Does the nervous system work fast or slow? Hint, think about the reflex arc. Does that move fast or slow?
15. Does the endocrine system work fast or slow? Hint: think about when you went through puberty, did those changes happen fast or slow?
16. What cells are responsible for cellular communication?
17. What is passive immunity and active immunity? What is the difference?

18. How are hormones transported?
19. What is an axon? What is a dendrite?
What is a synapse?
20. What is the alveoli?
21. How does a vaccination stimulate the immune system?
22. What is an antibody?
23. What makes antibodies?
24. What is path of blood flowing through the heart?
25. How does HIV/AIDS leave the body exposed to get a disease?
26. What does a white blood cell do?
27. What do platelets do??
28. What do red blood cells do?
29. What are lymphocytes?
30. What would happen to an organism that is losing a competition for food and other resources? What would this look like on a graph?
31. What does a graph of a stable equilibrium look like?
32. What is a producer?
33. What is a consumer?
34. What is an energy pyramid? How much energy is lost at each level?
35. What direction does the energy flow?
36. What is a niche?
37. What is a habitat?
38. How can non-native plants disrupt an ecosystem?
39. Draw a food pyramid with 3 levels.
40. What is a gene pool?
41. If Gene "B" is better than gene "b", and offers more survival advantages, what would you expect to happen to the frequency of gene "B"?
42. What are the conditions of Hardy – Weinberg Equilibrium?
43. What is DDT?
44. Why would some organisms survive DDT exposure?
45. What is the punnett square for Tt x Tt? How many offspring/ what percent are Homozygous Tall, Heterozygous Tall, and Homozygous recessive?
46. Oil in the Gulf has disrupted the ecosystems of many states. Would organisms survive better if there was more variety of wildlife or less variety of wildlife? Why?
47. How did populations of peppered moths change during the industrial revolution?
48. Some antibiotics don't work against the original strain of bacteria. How could this happen? Use evolution to explain.
49. What were Charles Darwin's discoveries?
50. What is geographic isolation?
51. What is adaptive radiation?
52. What is comparative embryology?
53. What is comparative anatomy?
54. What is Natural Selection?
55. What is the Law of Superposition?
56. How do mutations affect populations in a good way?
57. How do mutations affect populations in a bad way?