Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period\_\_\_\_

**Review for Semester Exam**

1. What are the parts of the cell theory?

2. Describe the composition of the plasma membrane. What is its function?

3. How do plant and animal cells differ?

4. How are eukaryotic and prokaryotic cells different?

5. How are eukaryotic and prokaryotic cells similar?

6. What type of microscope is used to view living organisms, like those found in pond water?

7. A freshwater plant is placed into very salty water. Explain what will likely happen. Why would this happen?

8. What is needed to make an idea become a theory?

9. How do the daughter cells produced through mitosis compare to the parent cell?

10. What can originally cause cancer?

11. Which elements are found in all organic macromolecules?

12. What is an advantage of sexual reproduction over asexual reproduction?

13. What is the purpose of an enzyme in a chemical reaction?

14. What is the equation for photosynthesis?

15. Where does the energy from the sun ultimately end of being stored at the end of photosynthesis?

16. What process converts food energy into ATP in the mitochondria? What does this process require?

17. What does the process described above produce?

18. What happens when the bonds between phosphate groups in ATP are broken?

19. What is the connection between photosynthesis and cellular respiration?

20. What is the purpose of crossing-over during meiosis?

21. Which type of organic macromolecule stores large amounts of energy for long-term use?

22. Why is carbon able to bond with more types of atoms than most other elements?

23. What is the function of carbohydrates?

24. What property of water gives it a high heat capacity?

25. Why is water considered the “universal solvent”?

26. Which type of transport “pumps” substances from areas of lower concentration to areas of higher concentration?

27. Draw the stages of mitosis.

28. When does the amount of DNA in a cell double? When does it return to its normal amount?

29. What is the end result of meiosis?

30. How does a zygote become an embryo?

31. How do cancer cells differ from normal cells?

32. What would happen if you placed a plant cell in distilled (100% water)?

33. What is the purpose of mitosis? Cytokinesis?

34. Explain how an enzyme works.

35. What is an independent variable?

36. What is the purpose of ATP?

37. What processes are part of the cell cycle?

38. When does crossing-over occur?

39. What are the building blocks of DNA?

40. What is a plant vacuole used for?

41. How does water having a high specific heat help the human body?

42. What does it mean to be aerobic? Anaerobic?

43. What happens in cellular respiration when oxygen is not present?