BIOLOGY REVIEW WORKSHEET

Directions: Using your Biology Review notes and text book, complete the following questions and diagrams.

I. What is Science?

1. What is the difference between a **quantitative** and a **qualitative** observation? Give examples of each.

2. What is the difference between a **hypothesis** and a **theory**?

3. List the steps in the **Scientific Method**.

4. What is a **controlled** experiment?

II. Studying Biology

5. List the **characteristics of living things** and explain why a virus is not considered a living thing.

6. Define **Homeostasis** and give an example of this in the human body.

III. The Nature of Matter

7. Define the following:

a. Atom-

b. Proton-

c. Electron-

d. Neutron-

8. What is the difference between a covalent bond and an ionic bond. Give examples of each type.

9. What properties make water such a special molecule?

10. What is a solution? Give example

11. What is a suspension? Give example

12. What is the pH scale? What is the pH range of an acid, base, and pure water?

13. What is the difference between an inorganic and an organic compound? Give examples of each

14. List the 4 types of organic compounds found in living things. Give examples of each.

15. Define the following terms:

a. Monomer-

b. Polymer-

16. Complete the following chart:

Organic Compound	Monomer	Polymer	Use in the cell
Carbohydrate			
Lipid			
Nucleic Acid			
Protein			

17. What is **Activation Energy**?

18. What is an **enzyme** and how is it affected by temperature and pH?

IV. The Biosphere

19. What are biotic and abiotic factors? Give examples of each

20. Define the following terms:

a. **Species**

b. **Population**

c. **Communities**

d. **Ecosystem**

e. **Biomes**

f. **Biosphere**

V. Energy Flow

21. Define the following terms:

a. **Producer/autotrophy**-

b. **Consumer/Heterotroph**-

22. What is **chemosynthesis** and where is it found?

23. What is the difference between a **food web** and a **food chain**?

24. What is a **trophic level**?

25. What is an **ecological pyramid**?

26. How much energy is available to each succeeding trophic level in an energy pyramid? Where does the energy go?

VI. Cycles of Matter

27. What is a **biogeochemical cycle**?

28. Describe the following **nutrient cycles**:

a. **Carbon cycle-**

b. **Nitrogen cycle**-

c. **Phosphorus cycle**-

29. What is a **limiting nutrient** and what effect does it have on an ecosystem?

VII. Populations

30. What are the 4 factors that affect the growth rate of a population?

31. Describe **exponential** growth and **logistic** growth.

VIII. Humans in the Biosphere

32. What is the most important source for environmental change today? Give examples

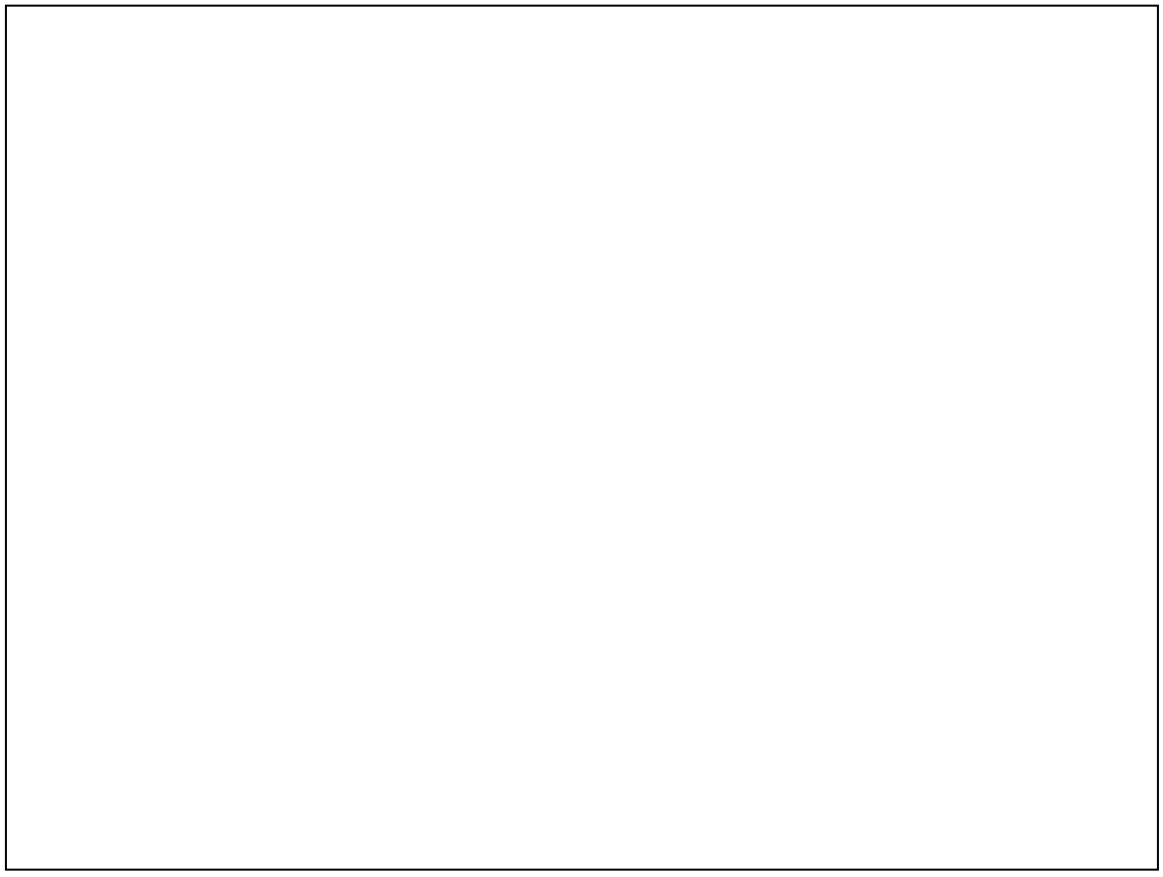
33. What is **biodiversity**?

34. What is **global warming** and what causes it?

VIII. Cells

35. What is the difference between a **prokaryote** and a **eukaryote**? Give examples of each

36 Draw and label a typical **animal cell** below. Make sure to diagram the following cell parts: **Cell membrane, nucleus, cytoplasm, nucleolus, ribosome, endoplasmic reticulum, golgi apparatus, lysosome, vacuole (vesicles), mitochondria**.



37. How are **chloroplasts** and **mitochondria** similar? How are they different?

IX. Movement through the Membrane

38. What is diffusion?

38. What is osmosis?

X. Diversity of Life

39. List and describe the **levels or organization** and describe each

XI. Energy and Life

40. What is **ATP**?

41. What is the **equation** for **photosynthesis**?

42. What **organelle** does photosynthesis take place in? What kinds of cells perform photosynthesis?

43. What is a **pigment**? What pigment is found in green plants?

XII. Cellular Respiration

44. What is **equation** for **cellular respiration**?

45. What organelle does **cellular respiration** take place in? What kinds of cells use cellular respiration?

XIII. Cell growth and Division

46. What are the two limits to cell growth?

XIV. Cell Division

47. What is the cell cycle?

48. What is Mitosis? List the 4 phases

XV. Meiosis

49. What is meiosis and where and why does it take place?

50. What is the difference between diploid and haploid cells? Where are each type of cell found?