Name: _____

Learning Objectives: *The human population has been growing rapidly for centuries. What is happening and, most important, what will happen to all of us and our planet if this continues? After reading this chapter, you should understand that . . .*
* *Ultimately, there can be no long-term solutions to environmental problems unless the **human population stops increasing;***
* *Two major questions about the human population are (1) what controls its rate of growth and (2) how many people Earth can sustain;*
* ***Modern medical practices and improvements in sanitation, control of disease-spreading organisms, and supplies of human necessities** have lowered death rates and accelerated the net rate of human population growth;*
* *Although the death rate has declined, so **more people live longer,** the rapid increase in the human population has occurred with little or no change in the maximum lifetime of an individual, which is still less than 120 years;*
* *In general, countries with a high standard of living have moved more quickly to a lower birth rate than have countries with a low standard of living;*
* *Although we cannot predict with absolute certainty what the future **human carrying capacity** of Earth will be, an understanding of human population dynamics can help us make useful forecasts;*
1: List the *symptoms and vectors* (how spread) of the following disease:

* **H1N1 (Swine Flu):**

* **West Nile Virus:**

* **SARS** *(Severe Acute Respiratory Syndrome)*:

2: Why are diseases that affect humans **expected to increase** in the future?

3: ***Define the following:***
* Population Dynamics:

* A Population:

* Species:

* Demography:

4: What are the **5 key properties** of any population?

5: What are the **4 phases of the human population**?

6: *Define the following terms:*

* Crude Birth Rate:

* Crude Death Rate:

* Crude Growth Rate:

* TFR *(Total Fertility Rate):*

* Doubling Time: *(define and calculate?)*

* Life Expectancy Rate:

* GNP Per Capita:
7: What is the **S-shaped or Logistic Growth Curve**?

8: Explain this equation: **P2 = P1 + (B - D) + (I - E)**

9: Explain this equation: g = (B -D)/N or g = G/N

10: What does an **age-structure pyramid** show?

11: Summarize *(one paragraph)* The Prophecy of **Thomas Malthus**:

12: What is the **demographic transition**?

13: What is the difference between a **maximum lifetime and life expectancy**?

14: Which country has the **highest life expectancy**? **Who is 2nd**?

15: What is the *life expectancy of the United States*?

16: Which country has the **shortest life expectancy**?

17: When discussing the **carrying capacity of the Earth-** *What are the:*

* Short-Term Factors:

* Intermediate-Term Factors:

* Long-Term Factors:

18: Explain how the carrying capacity of the Earth is a *combination* of science and of values.

19: What is the **simplest and most effective means** of *slowing* population growth?

20: Three characteristics of a population are the birth rate, growth rate, and death rate. **How has each been affected** by (a) modern medicine, (b) modern agriculture, and (c) modern industry?

21: What is meant by the statement *"What is good for an individual is not always good for a population"?*

22: *What environmental factors* are likely to increase the chances of an outbreak of an epidemic disease?

23:What is the **demographic transition**? *When would one expect* <u>replacement-level fertility</u> to be achieved—before, during, or after the demographic transition?

24: Based on the history of human populations in various countries, **how would you expect the following to change** as per capita income increased: (a) birth rates, (b) death rates, (c) average family size, and (d) age structure of the population? **Explain.**