TAKS BLITZ

1. Transcription (TC) or Translation (TS)?

   A. ____ When DNA is changed to mRNA
   B. ____ When mRNA turns to tRNA
   C. ____ After the genetic code enters the ribosomes
   D. ____ Just before the genetic code leaves the nucleus
   E. ____ When both molecules have uracil
   F. ____ When one of the molecules has thymine

2. Conduction (Cd), Convection (Cv), or Radiation (R)?

   A. ____ Heat from light (electromagnetic) waves.
   B. ____ Heat from touch.
   C. ____ Heat transfer by moving liquids or gases.
   D. ____ When you feel heat coming from a hot wall (you are not touching the wall).
   E. ____ Heat from the stove to a pot of water.

3. Acids and Bases:
   A) What is an acid?

   B) What is the range of acids?

   C) What is a base?

   D) What is the range of bases?

   E) When you mix acids and bases you get?

   F) To make a solution have a lower pH you add a:

   G) To make a solution have a higher pH you add a:

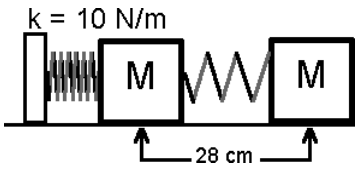
4. You need a pH of 6.5, but currently your solution has a pH of 4.5. What do you add to your solution to get the desired pH?

5. Give the units for the following physics quantities:

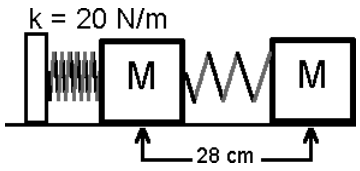
   A. ____ force
   B. ____ power
   C. ____ energy
   D. ____ velocity
   E. ____ distance
   F. ____ time
   G. ____ acceleration
   H. ____ work
   I. ____ mech. advantage
   J. ____ kinetic Energy
   K. ____ wavelength
   L. ____ potential energy

6. How many variables do you change in a good experiment?

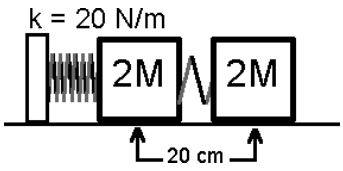
7. You are trying to decide whether or not heating a spring will change its strength. You take three springs and put mass on them as seen below. Then you apply heat to all three of them, with more heat put on spring A than B or C. Spring A is easier to pull than the others. What should be your conclusion about how heat affects springs?



Spring A



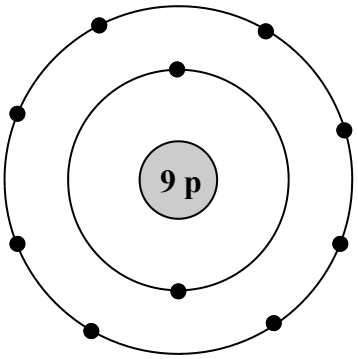
Spring B



Spring C

8. Types of Symbiosis:
   A) _____ A leech sucking on your arm.
   B) _____ Bacteria living in our stomach eat the food and help us digest the food.
   C) _____ A T-Rex chasing, capturing, and eating a Brontosaurus.
   D) _____ Barnacles living on the chin of a whale. The barnacles gets more access to food, thru the whale's movement; the whale is not helped or harmed by the barnacles.

9. The above T-Rex eats meat, so we call it a c_____
10. The above Brontosaurus eats plants so we call it a h_____.



11. Use the atom diagram to answer the following:
    A) The circle with the "9 p" represents what part of the atom?
    B) The "p" stands for what?
    C) What is the atomic number of the element?
    D) What element is it?
    E) How many electrons does it have?
    F) How many valence electrons does it have?
    G) Are the electrons positive or negative?
    H) Is it a neutral atom or an ion?

12. On the periodic table, give an element that has similar reactivity as bromine.

13. Give the balanced formula for an ionic compound made up of sodium (Na^{1+}) and oxygen (O^{2-}).

14. Physical or Chemical change?

A.____ When you chew up your food.
B. ____ When your stomach digests your food
C. ____ When you dissolve sugar into water.
D. ____ When ice melts.
E. ____ When rocks break due to ice forming in cracks (known as "weathering").
F. ____ Iron rusting.
G. ____ A substance put into water creates bubbles.

15. Choose the most appropriate organelle for the following.
    A. _____ contains the genetic code.
    B. _____ produces energy for the cell.
    C. _____ makes proteins for the cell.
    D. _____ protects the cell from the outside environment.
    E. _____ where photosynthesis occurs.

16. Make this reaction fulfill the Law of Conservation of Mass.

$$\_\_\_\_ CO_2 + \_\_\_\_ H_2O + \text{energy} \rightarrow \_\_\_\_ C_6H_{12}O_6 + \_\_\_\_ O_2$$

17. Using the above chemical equation, answer the following questions.
    A) Does the organism take in oxygen or carbon dioxide?
    B) Does the organism give off oxygen or carbon dioxide?
    C) Is it a plant or an animal?
    D) Does the above equation represent respiration or photosynthesis?