Concepts of Science NAME\_\_\_\_\_\_ Seat No.\_\_\_\_\_ Exam 1 January 26, 1999 Class Time\_\_\_\_\_ Seat No.\_\_\_\_\_

**When Solving Problems, be sure to show all work** 1. What is the mass of a 175 lb man in kg (10%)

2. What is the volumn of a 2.5 I bottle in gal? (10%)

3. The mass of the moon is  $7.3 \times 10^{22}$  kg and its radius is 1738 km. Calculate the force of gravity on a 100 kg person standing on the surface of the moon. (15%)

4. a. Briefly discuss reasons why the evidence from the Martian rock presented by NASA scientists in supporting their claim to ancient life on Mars has come under serious attack (10%).

b. What further work must the NASA team do to convince the skeptics of ancient life on Mars?(10%)

5. The chart below lists several classical concepts which we now know are no longer accurate. Complete the chart by listing our current view of the concept and the name of the individual responsible for this current view. (15%)

Classical View	Current View	Person responsible for change
Solar system is geocentric		
The heavenly bodies are perfect		
The panets move in circular orbits		

6. J.J. Lagrange called Newton "the greatest genius who ever lived". What was Newton's contribution to our understanding of the solar system?(10%)

7. Below are listed three people along with one of their contributions. Briefly describe what each individual did and how it contributed to our understanding of the atom. (20%)

a. Antoine Lavoisier - a classic experiment with mercuric oxide (HgO).

b. Ernest Rutherford - an important experiment with gold foil.

c. Dimitri Mendeleev - the periodic table

## Useful Information:

Meter = 39.37 inches = 1.094 yards Yard = 0.9144 meter Mile = 1.609 kilometers Inch = 2.54 centimeter Quart = 0.9463 liter Pound = 0.453 kilograms Ounce = 28.53 gram