EXAMPLE EXAMINATION

Biology

1. Cell respiration is a process that takes place in:
   a. The nucleus.
   b. The mitochondria.
   c. The ribosomes.
   d. The lysosomes.

2. Prokaryotic cells lack:
   a. Double-stranded DNA.
   b. RNA.
   c. Centrioles.
   d. Plasma membrane.

3. Which of the following kinds of cells synthesize myelin?:
   a. Schwann cells.
   b. Neurons.
   c. Platelets.
   d. Myelocytes.

Chemistry

1. Starting with a 4 M solution of NaCl, you want to prepare 2 L of a 0.1 M solution of NaCl. How much of the concentrated solution should you use?:
   a. 40 mL.
   b. 50 mL.
   c. 66.7 mL.
   d. 100 mL.
2. The geometry of a water molecule is:
   a. Rectangular.
   b. Tetrahedral.
   c. **Angular.**
   d. Linear.

3. The elements in period table are arranged by increasing order of:
   a. Atomic mass.
   b. **Atomic number.**
   c. Molecular weight.
   d. Molecular radius.

**Mathematics**

1. Which of the following lines is parallel to the line: \( \frac{x-1}{2} = \frac{y-2}{-4} \):
   a. \( 2x+4y-8=0 \)
   b. \( 4x+2y-8=0 \)
   c. 4x-2y-8=0
   d. None.

2. Find the derivative of the function \( y=\cos^2x \) in \( x=0 \):
   a. 1.
   b. 2
   c. 0
   d. None.

3. What is the inflection point of the function \( y=2x^3-6x^2+5? \):
   a. \((-1,-3).\)
   b. \((1,0).\)
   c. \((1,1).\)
   d. None.