Assignment 2

Summarizing scientific information

Question 1. Essay (5 points)
Write a short essay (one paragraph) that summarizes modern concerns regarding endocrine disrupters. The information should come only from the videos and articles used in this week’s laboratory activities. It should be written in a clear and concise fashion that the general public could understand. Your essay must include these points to receive full credit.

Analyzing Scientific reports

Questions 2 - 4 refer to the Harbor Seals article that you should have downloaded by now. (Read the introduction and conclusion, then skim through the rest of the article).

Question 2. True/false (5 points—1 point each)
Write true of false in each blank.

_____ Research in the Harbor Seals article is a good example of the experimental method.

_____ The hypothesis of the Harbor Seals study is stated very clearly.

_____ The purpose of the research is to determine the levels of several environmental contaminants in the tissues of seals from the northwestern Atlantic coast.

_____ The main method in the research is to document the number of sick or dead seals along the northwestern Atlantic coast.

_____ From research results, the authors conclude that contaminants in the ocean accumulate in seal tissues at levels that could adversely affect seal health.

Question 3. Multiple-choice (1 point)
The Harbor Seals article is an example of:

- primary literature because it contains abbreviations and scientific jargon
- primary literature because it is written by the original researchers
- secondary literature because it is not the work of the original researchers
- secondary literature because it has a large number of citations in the reference list
- tertiary literature because it is written for the general public

Question 4. Essay (2 points)
Pretend that you are writing a scientific paper and wish to cite the Harbor Seals article. Write the citation in two ways:

1) as it would appear in the discussion section of your paper
Designing an experiment and graphing data

Question 5. Essay (3 points)
a) Write a hypothesis for the heart rate experiment.

b) Take your own resting pulse rate at least 3 times to determine the variation among replicate measurements. List your measurements and indicate how many replicates you might need to get accurate data for each subject’s heart rate.

Question 6. File upload (5 points)
Use the on-line plotter to graph the data on heart rate in non-smokers vs. smokers. Be sure to do the following:
1) choose the correct type of graph (Hint: average the data for each group of 10 subjects before graphing)
2) give the values column an appropriate name, including unit of measurement (use the table menu to name it)
3) Use appropriate names for the 4 groups of subjects.

Capture an image of your graph, including data columns, and submit it to WebAssign.

Question 7. Matching (5 points)
Match the following terms to their counterparts in the experiment on heart rate. (There is no partial credit for this question; your score will be 5 or 0.)

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>subjects who smoke</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dependent variable</td>
<td>subjects who do not smoke</td>
</tr>
<tr>
<td>Uncontrolled variable</td>
<td>pulse rate</td>
</tr>
<tr>
<td>Control group</td>
<td>number of cigarettes smoked per day</td>
</tr>
<tr>
<td>Experimental group</td>
<td>whether a subject smokes or not</td>
</tr>
</tbody>
</table>

Question 8. Essay (2 points)
Think about the heart rate experiment and identify two additional uncontrolled variables (not the one in question 7). If you were to do the experiment again, how would you improve it to control for these variables?