SCIENCE LIBRARY

Name:________________________________ Section:_______ Date:____________

1. You are assigned to do an experiment using the element gallium. You need to get some data on the basic properties of gallium and you are also concerned about the possible toxicity of gallium.

A. First you do a search on IRIS to see what is available in the university system. You find many books, but most are about gallium-arsenide. Exclude these to narrow your search and find one which might have the information you need. What are the title, author(s) and call number of the book?

In what library is it located and has it been checked out?

B. Since you need the data fast, you do a search on the Internet and find the information you need. Your search with IRIS tells you that there are many references to gallium arsenide – which is not of interest to you. Use an Internet search engine such as google (www.google.com) to find the information you need. Be sure to limit your search to not include references to gallium arsenide. You may find it useful to eliminate other references as well.

What search engine did you use? What URL's did you get the information from?

What does gallium look like?

What is the melting point of gallium? What peculiar properties does it exhibit when freezing?

What are its thermal conductivity, specific heat and heat of fusion?

What safety precautions should you take when you're doing an experiment on gallium near room temperature?

You have heard that much of the world's supply of gallium is being used for neutrino experiments. Find a URL that describes the experiment. In a few (well written) sentences describe the purpose of the experiments.

2. You are assigned to write a research paper on global (Greenhouse) warming due to carbon dioxide. Use an index such as Web of Science to locate three relevant periodical (magazine or journal) articles. The articles must be relevant and at a level you can understand but, on the other hand, must not just be a superficial article for popular consumption. Articles in Scientific American, Science, Nature etc. should be suitable while Readers Digest or Physical Review articles would not. Give below the full citations for the three articles you choose and the indexes you used to find them.

Are these magazines/journals available in the university library system in New Brunswick? Where?

Give the citation for one book in the university library system that would also be a suitable reference for your paper.

3. Give the titles and journal citations for an article written by Professor J. P Hughes concerning X-ray polarization, and his latest publication.

4. You have an idea for a better mouse trap! Before you spend any money developing the idea you want to see what kind of mouse traps have been patented already. Use the IBM patent database: http://patent.womplex.ibm.com/ to do an electronic search for mousetrap patents since 1970. How many patents do you find? Describe the basic idea behind a recent mouse trap patent. Be sure to give the title and patent number. What is the title and patent number of a patent assigned to Pied Piper International?

5. You are reading a scientific article on optics and you come across some terminology you don't understand. Look up the meaning of the words given below and give the location of the source you used. If there are several meanings give the one most likely to apply in the context of your article.

gigahertz

exciton

CCD

parsec