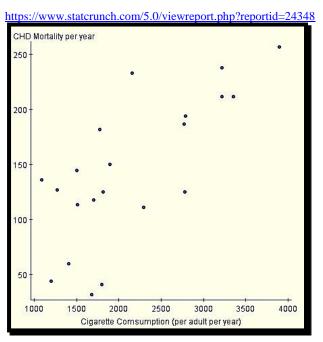
## BIOL 1114 Exam #1 (PREVIEW) September 17, 2018

The following material will appear on the upcoming exam. Use this preview to familiarize yourself with the material, and guide you in studying. Be sure to look up the definitions of any words you do not know. You are free to discuss this material or ask questions about it.

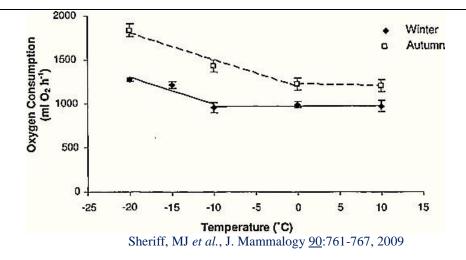
Use a #2 pencil to fill in the information on your NCS answer sheet.

- 1) Enter your last name and first name as indicated and darken the corresponding circles
- 2) Enter your CWID in the spaces indicated for "Student ID" and darken the corresponding circles.
- 3) Enter **1831** in the spaces indicated for "**Course number**" and darken the corresponding circles.
- 4) Enter the exam **form** (**001 or 002**) in the spaces indicated for "**SEC**" and darken the corresponding circles 5) <u>Write</u> your **O-Key Account Username** above the words "Last Name"



Summary of mortality rates from coronary heart disease (CHD) associated with cigarette smoking

Although linked strongly with lung diseases, there is much interest regarding the contribution of cigarette smoking to coronary heart disease (CHD). The data presented in the graph were collected over a 30 year period from heart patients from several nations who were surveyed on their use of cigarettes. Mortality rates were calculated as <u>number who died from CHD per 100,000 people per year.</u>



The graph above summarizes a study of North American snowshoe hares (*Lepus americanus*), in which hares were placed in temperature-controlled chambers and their oxygen consumption measured. Two groups of hares were used: 9 during the winter and 7 during the autumn.

You've just sprinted to class, out of breath and perspiring heavily. There is relatively little oxygen in your bloodstream and much, much less in your cells.

Scientists discover a new toxin that, when applied to mitochondria, still allows for the production of a small amount of ATP and a small amount of  $CO_2$  but far less than would normally be produced.

A doctor looks at a blood sample from a patient. The red blood cells look shriveled.

Inside the tropical rainforest exhibit at the Gotham City Zoo, a kingfisher (bird) spots a frog on a rock and gives chase. Just as the kingfisher was about to snatch its prey, a visitor opens the door between the tropical rainforest exhibit (Temp: high Humidity: high) and the tundra exhibit (Temp: low Humidity: low). The frog leaps into the cold tundra stream, and the bird lands on a branch overlooking the stream. Both remain there for a while till their physiological conditions, which were elevated during the chase, return to the levels they were before the chase. To avoid the bird, the frog must remain under the cold water without breathing for a long period of time.

A scientist at the Gotham City Zoo is curious about whether adding pyruvate to the animals' diets would have a positive effect on their metabolism. He tests this by altering the mealworms he feeds to some lizards. Into the dead mealworms that he feeds 10 male lizards (average mass 8g), he injects 0.1 ml of a 5% pyruvate solution. Into the dead mealworms he feeds another 10 male lizards (average mass 27 g), he injects he injects 0.1 ml of a 0% pyruvate solution. He feeds each lizard 10 worms and measures activity and weight gain in the two groups.

ATP production stopped in the cells in a bird's kidney (assuming they worked like a mammal). Reminder: the filtrate is the solution traveling through the nephron loop.

