BIOL 1114 Exam #1 (Preview) February 9, 2015

Use a #2 pencil to fill in the information on your NCS answer sheet. Put your **O-Key Account Username** in the boxes indicated **for LAST NAME** and darken the appropriate circles. **Write your Name (Last, First)** and "**Star**" or "**No Star**" **in the space above the boxes containing your O-Key Account Username**. Darken the **(S or N)** in the **last column of the name circles**. Enter the number **1511** and **darken the corresponding circles** in the **first 4 columns** of the **"Student ID."** Failure to perform this correctly will incur a **-10pt handling fee**. Read all questions and answers ***carefully*** before choosing the **single BEST response** for each question. Feel free to ask the instructor for clarification.

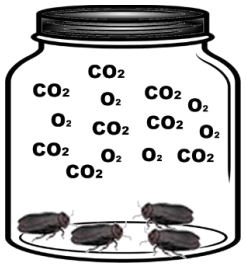
The material below will appear on the exam and should be used to answer the questions associated with it. You should examine this material to be sure you understand it. You should also take it into consideration when you are studying. You are allowed to discuss it with others and to ask questions about it during review sessions.

The university's Department of Residential Life was interested in the roles that residence location (dorms or off-campus housing) and sex (male or female) had on academic performance (average or mean GPA). For the first two years of undergraduate enrollees, they produced the following table:

N	year	sex	location	GPA (mean)
1950	freshman	m	dorms	2.85
2000	freshman	f	dorms	2.95
1950	freshman	m	off-campus	2.48
2000	freshman	f	off-campus	2.49
1800	sophomore	m	dorms	2.95
1900	sophomore	f	dorms	3.05
1800	sophomore	m	off-campus	2.75
1900	sophomore	f	off-campus	2.71

Cockroaches in the dorms may be a genuine nuisance, but the prepared BIOL 1114 student understands their nature quite well. You notice on a chilly morning, as the temperature of the dorm begins to rise, smaller cockroaches become active sooner than the larger ones.

In a sealed jar of cockroaches, CO_2 increases and oxygen (O_2) decreases.



Tilapia are freshwater fish that can be raised in tanks as food fish in aquaculture facilities. Scientists are interested in increasing the growth of Tilapia and want to find out which diet results in the greatest fish biomass (weight) gain. They test duckweed (a plant), algae (a single-celled photosynthetic organism), or a combined diet of duckweed and algae.

Tilapia

duckweed

algae

Wilson Beagle has decided to attend this year's Beagle family reunion and has been asked to bring a new and exciting dish! He decided to bring a new dog food. It contains *Puppy-Energy 4000*, a chemical that is supposed to increase ATP production by causing the Electron Transport Chain to produce a higher than normal proton gradient. Wilson's cousin, Dan, wolfs down this new and delicious kibble (treat). Wilson notices the new food causes Dan to struggle with his energy level and soon his health deteriorates. To save Dan, Wilson must figure out how the new chemical is affecting Dan and reverse its effects!

Recently, Barry Allen became a super-hero with the ability to run at super-human speeds. Barry needs to eat a large amount of food each day to keep up his energy levels. Fascinated by his powers, Dr. Wells, a local scientist, decides to experiment on Barry to find the origin of his powers. Dr. Wells decides to test Barry's cells to see how they respond to a **variety of environments**. To test this, Dr. Wells places samples of Barry's cells into solutions of higher, lower, and equal salt concentration.

You just moved to Stillwater to attend OSU and are renting a house with two other housemates. All three of you have brought pets: a dog, a cat, and an iguana. Since you and your housemates have different class schedules, you decide to get organized and share the responsibilities of caring for the three pets. The dog is the largest animal and needs to be walked twice a day. The cat is small, usually sedentary and likes the comfort of a warm home. The iguana is about the same size as the cat.