

BIOL 1114 Exam #2 (Preview) October 21, 2013

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 “NoStar”** 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 **1332** 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 use of poison gases (such as **sarin**) as chemical weapons is in the news lately. The U.S. Army equips many of its medics with injectable atropine as an antidote for **sarin** gas, which affects synaptic transmission at neuromuscular junctions. Atropine blocks acetylcholine receptors on post-synaptic muscle cell membranes.

Oak trees in the genus *Quercus*, encompass 600 species found across the northern hemisphere. The Bur Oak (*Quercus macrocarpa*) can be found growing on campus where they provide shade, food and shelter to several types of mammals and birds. Although the tree can be quite large, the acorns produced each fall by the oak are just 0.5-1 inch long. The Eastern Fox Squirrel (*Sciurus niger*) is common on our campus and can be seen collecting and hoarding a variety of food items (including acorns and other fruits) for future use.

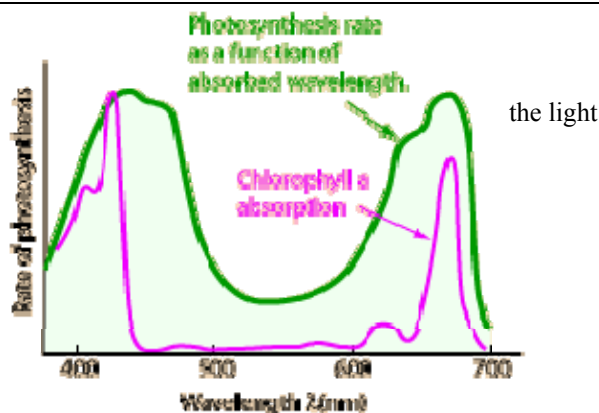
While gathering acorns, a squirrel is nearly stepped on by a student. Its brain sends a message to the leg muscles causing it to run up a tree.

An unfortunate squirrel ate some berries on campus after they were sprayed with imidacloprid, an insecticide that mimics (acts like) acetylcholine in the synapse.

You have a pet rat and you're going on a vacation for a few days. You haven't found anyone that can take care of your rat and you're worried that it might starve while you're gone.

Within the past several months, seismic activity has caused a new island to appear in the Arabian Sea near the coast of Pakistan. No plants or animals were visible to the first scientists to observe this island. A flock of birds, carrying a few seed-rich twigs from forests of mimosa trees on the mainland, flies over the new island without landing but several birds accidentally drop their twigs. Eventually, the seeds germinate into mimosa saplings.

The difference between the rate of photosynthesis and absorption rate for chlorophyll are depicted in the graph.



<http://hyperphysics.phy-astr.gsu.edu/hbase/biology/ligabs.html>