BIOL 1010 Introduction to Biology: The Evolution and Diversity of Life. Spring 2011
Sections A & B

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OK, now for the serious stuff . . .

* Your performance was a little bit better than last time, but not much!
* Remember, these topical Section exams are only worth 10% of your final grade each, and there's four of them, but between the last two, that's now 20%. And there's two more.
* Plus, that Attendance/Participation component is worth a very easy 20%. But lots of you are blowing those points off by not coming to class!
* And, the comprehensive final is worth 40%!
Some of you are being very naive not to pick up your old exams. I still have a pile of them from the first test, and I’ll add this last one to those as soon as they are ready.

The comprehensive final will come directly from these old exams. Sure, I may revise the questions some, but I will pick and choose them all from those that you’ve already seen (the only exception is the final lecture).

That is why I give you back your old ones — take advantage of it — one of the best forms of learning is that from your mistakes. You’ve certainly made lots of them, so learn from them!

Plus, that ‘Scantron’ machine can screw up — students have found errors where the machine marked correct answers wrong! So you need to check.
It’s time for another in-class assignment.
Considering that I am only presenting the material required by
the teaching objectives of this course as laid out by the Board of
Reagents, VSU, and the Biology Department . . .

Tell me what has worked best for you this semester regarding
my lectures. In other words, what works best for you — more
or less — animations, videos, pictures, text, or interactive
activities (though this is really difficult in a class this big!)? Do
you have any other ideas?

What is hardest about the exams; why are so many of you
having such a difficult time (other than the necessary multiple
choice format mandated by the class size)?

Make your responses legible and be sure to put your name and
section number on the paper. Get them to me for credit as you
leave!
Here're the distributions...

1010A:
Mean Score 70%
Highest Score 96%
Lowest Score 12%
And in . . .

1010B:
Mean Score  72%
Highest Score  98%
Lowest Score  25%
Much better!
And the questions only about a third of you got right:

Less than a billion years after the first cells had evolved on the Earth, between 2.5 and 3.5 billion years ago, the primary descendants of LUCA (the Last Universal Common Ancestor) did not:

A. Include cells that evolved photosynthesis
B. Include cells that evolved chemosynthesis
C. Include cells that eventually evolved into Eukaryotes
D. Diversify over the course of all evolutionary history into fewer than 500 species

Pick the statement from the following that is not true regarding microbial mats:

A. Microbial phenotypes can be very different in a microbial mat than they are when living solitary
B. Microbial mats are often complex communities consisting of many microbial species
C. The bottom layers of aquatic microbial mats are oxygen rich with a neutral pH
D. Aquatic microbial mats usually contain Cyanobacteria in the top layers
In the Archaea, the largest, most diverse group, containing heat, acid, and salt lovers, and methanogens are:
A. The Crenarchaeota (eocytes)
B. The Nanoarchaeota
C. The Euryarchaeota
D. The Korarchaeota

In the Bacteria, the ________ group usually come out as the most basal, ancestral clade in phylogenies.
A. Archaea
B. Aquaficae
C. Cyanobacteria
D. Proteobacter

The largest proportion and greatest diversity of Archaea exist in:
A. Swamps
B. Volcanoes
C. Hot springs and hydrothermal vents
D. Very cold environments, e.g. Antarctica
A chemosynthetic bacteria or archaea only requires this to survive:

A. Light and carbon dioxide  
B. Inorganic compounds  
C. Organic compounds  
D. Oxygen  

Bacterial plasmids seldom contain genes for:

A. Antibiotic resistance  
B. The sex fertility factor  
C. Pathogenicity or virulence  
D. Basic metabolic activities of the cell  

Things that we have learned through bacterial genomics do not include:

A. Many examples of just how incredibly prevalent bacterial horizontal gene transfer is  
B. How much more complex bacterial genomes are versus eukaryotic genomes  
C. The quick and easy identification of genes involved in virulence  
D. Confirmation of ribosomal RNA phylogenies
Which statement is true regarding the evolution of antibiotic resistance in pathogenic bacteria?

A. This phenomenon is accelerated by humans completing their entire antibiotic prescription regime
B. This phenomenon is accelerated by the supplementation of animal feeds with antibiotics
C. This phenomenon was only a problem prior to the use of antibiotics by humans
D. This phenomenon will go away with the development of new antibiotics

Which of the following statements is true about nitrogen fixation?

A. Nitrogen gas in the atmosphere is directly used by animals in the biosynthesis of organic compounds
B. Nitrogen fixation is the process of converting ammonia, nitrates, and nitrites to nitrogen gas
C. Many forms of life can fix nitrogen — animals, plants, fungi, bacteria, and archaea
D. All life on Earth is dependent upon nitrogen fixation
One more time — which of the following is not true regarding symbiotic bacteria and archaea in our bodies?

A. Bacterial and archaeal symbionts help regulate fat storage
B. Babies acquire bacterial and archaeal symbionts well before birth
C. Bacterial and archaeal symbionts manufacture vitamins that we cannot make on our own
D. Bacterial and archaeal symbionts assist with the formation of the intestinal lining and its blood vessels

And last but not least, most of you got this right, but almost ten of you didn’t do what it says!

What did you fill in on the left /top end of the computerized answer sheet?

A. Nothing!
B. The wrong VSU student ID!
C. Only the printed number, no bubbles!
D. My VSU student ID, printed, and correctly bubbled in