BIO 1130 An Introduction to Organismal biology
Midterm examination
Worth either 15% or 20% of your final grade
Total points for both parts of the exam is 60 pts

Saturday, October 3, 2015

Part B: Written questions

a) Place your name and student number in the space provided below. Be sure that your student number is on the top of each of the following pages – the exam will be separated. ONLY place your student number on the pages where indicated

b) Answer all questions in the space provided on the exam. Do not transfer answers to the back of the page.

c) You may use either pencil of ink for your answers.

d) Answers as written paragraphs are preferred but point form is acceptable as long as the points are logically organized and not random statements or facts

e) This is not an open book exam.

f) No calculators allowed.

g) There are five pages including this one in part B of the exam, be sure you have all five pages.

h) Enter the multiple choice exam code in the space provided

Name: _____

Student number: _____

Multiple Choice Exam Code (MM or FF): _____

. .

12 pts Part 1. Briefly explain what each of the following or phrases means or the biological contribution made by the person. Where possible include an example in your explanation from a group or an organism to which the term or name applies.

Leclerc

{Scientist in the 18th century}{Proposes the idea of common ancestry/that there have been changes in the animals that are present (vestigial structures and cat similarities)}{Biogeography – different animals with similar lives in different locations/ marsupial wolf and mammalian wolf of Australia and North America.} Point each for a total of three points

Polyphyletic phylogeny

{A taxon/group of related organisms – taxon implies they are related if don't use it it must be clear that the organism are related to each other – share a phylogeny – evolutionary history} {includes all the descendents but not the ancestor} {Arthropods were once thought to be this}

Ultimate cause

{Why questions}{Ask questions that deal with things such as evolution and relationships}{Look for the larger patterns in a series of observations} {ex when a stimulus causes a action or behaviour the question asks why did this behaviour evolve this way – there will no doubt be other examples but evolution is involved in Why questions} Must have first two for a point each – either of the third or the fourth to give the maximum of 3 point

Physicalist

{explanation for how all organisms/animals were living things were like machines}{governed/behaved/explained by the rules/processes of Physics and Chemistry}{Humans weren't the same and this explanation didn't apply to humans} point each for a total of three points

18 pts Part 2: Fill in the missing word, or provide the one word answer in the space provided at the end of the sentence. If the line is missing, add it to the end of the line.

2.1 In allopatric speciation this no longer occurs between two populations because of some sort of physical barrier (Two words). _____ **Gene Flow** _____

2.2 Rome was attacked by these peoples who would sack the city and send Europe into the Medieval ages. _____ **Goths/Germans** _____

2.3 Synonym for evolutionary taxonomy. _____ **Natural** _____

2.4 The glass in fiber optic cables and the speed with which communication and data could be shared led Douglas Adams' to use it as the hallmark for this age of sand in his divisions of the modern age of science. _____ **Fourth** _____

2.5 The type of prediction that a scientist's test of a hypothesis is. ____ **Logical** _____

2.6 The wing of a bird, the front flipper of a dolphin and the foreleg of a horse are all good examples of _____ **Homologous** _____.

2.7 If you don't take enough measurements your result may be subject to this type of error. _____ **Sampling** _____

2.8 Historical narratives are often associated with this type of science. ____ **Natural** _____

2.9 After observing the migration of the caribou over a number of seasons a young biologist notices that on some days they stand on snow patches rather than grazing. It leads to the idea that standing on the snow protects against the attack of the mosquitoes that are abundant on the same days that this behavior happens. What kind of reasoning is this. _____ **Inductive** _____

2.10 In cladistics, a synapomorphy is a character shared by all members of a lineage, but lacking from a comparison group called this (Two words) _____ **Outgroup** _____

2.11 After recovering from the loss of Roman commerce and infrastructure, education and architecture flourished in Europe during this part of the Medieval age. _____ **High** _____

2.12 The Greek philosopher who is given the title Ancient (not Modern) Father of taxonomy worked with these organisms. _____ **Plants** _____

2.13 This result of the removal of a long-time barrier separating two populations of a species so that the two populations come in contact again is referred to as this type of contact. _____ **Secondary** _____

2.14 A subset, or branch, of organisms within a phylogeny that all have the same shared characters are referred to as this, and give this method of classification its name. _____ **Clade** _____

2.15 While Europe is plunged into the dark ages the Muslim word entered into this age (or era) of discovery. _____ **Golden** _____

2.16 In cladistics analysis each character in the analysis is scored as a plesiomorphy or an apomorphy. This processes is referred to as character _____ **Polarization** ____.

2.17 The Islamic scholars Al-Jahiz observations of animals predated this modern biological finding (Two words). _____ **Natural selection** _____

2.18 Even though pollen (male gamete) from a variety of different plant species land on the stigma (female) only those of the same species will ultimately fertilize the ovule (egg). It's an example of this type of isolation mechanism (Two words) __ **Gametic Isolation** ____

Part three of the exam is on the next page

10 pts Part 3: Answer the following two questions in the space provided.

3.1 How do pre- and postzygotic isolation mechanisms differ from each other? Give one example for each.

{Keep different species from mating} {The mechanism occurs before formation of the zygote/fertilization of the egg} {There are lots of examples and explanations may include Temporal, habitat, Behavioral, Mechanical or Gametic – one of these terms must appear in the example}{After the formation of the zygote {Examples would include: Hybrid inviability, sterility or breakdown – terms plus explanation for the point}

3.2 Describe the differences between Mechanical and Artificial taxonomy. Include in your answer who is credited with creating each of the two taxonomy types.

This answer comes from the miniblurb on the web site

{Artificial Aristotle}{Mechanical Linneaus} {Improves on the liner arrangement/diversity described by length descriptions ex: plants aren't below animals} {Addition of a hierarchical structure} {Identification of organisms by a genus species name/binomen}