

STUDENT NUMBER: _____

Don't enter your name.

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 62 pts

Saturday, October 2, 2010

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 or 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) There are five pages including this one in part B of the exam, be sure you have all five pages.
- g) Enter the multiple choice exam code in the space provided

Name: _____

Student number: _____

Multiple Choice Exam Code: _____



12 pts Part 1. Briefly explain what each of the following terms 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.

Physicalists

{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

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 points

Huxley

{Scientist in the 20th century, 1900s, 1930} {proposed the synthetic theory of evolution} {combines Darwin's ideas with the understanding of genetics/population genetics}

Null hypothesis {Test of hypothesis} {hypothesis an explanation of some observations} {outcome of the test is the hypothesis is not correct} point each for a total of three – If an example is used to answer the question be sure that all three of these components are clear in the example.

20 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 The Latin name for the great chain of being proposed by Aristotle
(two words). **Scala naturae**

2.2 This element is produced by dying red suns. **Carbon**

2.3 Natural sciences and physical scientists both agree that the objects that they study are subject to the laws of this discipline and those of physics. **Chemistry**

2.4 Protocells that have been made to date lack this one characteristic
of life. **Evolution**

2.5 Biology is first described as a science in this century; it marks the start of a better understanding of the living world. **Nineteenth**

2.6 These protein building blocks were found in the material produced by the Miller experiment
(two words) **Amino acids**

2.7 This gas wasn't present in earth's first atmosphere, its absence was why the early atmosphere was reducing. **Oxygen**

2.8 With about twenty different building blocks it was long thought that this biopolymer was the genetic material. **Protein**

2.9 This type of decay has been used to date the world's oldest rocks as being 4.5 billion years old. **Radioactive**

2.10 Organisms that lived in the past but are no longer living on earth are said to be this. **Extinct**

2.11 This type of literature is written by the investigators that did the work and been reviewed by their colleagues in the field for accuracy. **Primary**

2.12 Douglas Adams divides the history of modern science into four ages what was the principle investigative tool of his second age of sand. **Microscope**

2.13 In addition to making enough measurement you should also do this with your experiment to be sure you consistently reach the same conclusion. **Repeat/Replicate**

2.14 The validity of historical narrative was ignored as a result of the scientific revolution until the mid 1800's. This scientist revalidated the narrative as a true and sound scientific method. **Darwin**

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2.15 Number of Kingdoms in Linnaeus' classification. Two

2.16 This third eon in the geological time scale - single celled eukaryotes dominated the world's oceans at the time. Proterozoic

2.17 Most of the earth's gaseous atmosphere probably resulted from its release from the cooling molten core. The process was called this. Outgassing

2.18 From about 4,800 Ma to 3,800 Ma this eon saw the formation of our solar system and our planet earth. Hadean

Part three of the exam is on the next page

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

Describe the role of a theory and its falsification in investigations in Physical Sciences in the early 20th century

{ Theory is comprehensive/detailed explanation supported with a large amount of data and observations } { Arrived at by Deductive reasoning } { Physical science is not willing to accept multiple theories } { acceptance of only one theory is because of the uniformity of the processes and materials of the science. /explains inanimate/nonliving objects which are much more uniform when compared to living } { Is immediately falsified if there is a contradictory result or tests of the theory } point each for a total of 5.

How does the RNA world hypothesis explain the origins of the Central Dogma in Biology; what is the Central Dogma?

{ Central Dogma is that DNA contains the coded information that is transferred to messageRNA } { Message RNA is then used to produce the protein or product that the genetic code codes for } { RNA world hypothesis is that RNA was the first molecule of the three to appear } { Evidence is that RNA is catalytic/catalytic in the ribosome } { problem we can't produce the base nucleotide/problem small strings are insoluble } see:
http://salinella.bio.uottawa.ca/BIO1130/Lectures/default.php?1130_lect04_Hadn_Preb.php??E?Md2ChapterMcp1

First two points – proper explanation of the Central dogma. Three points for remainder for a total of 5 points