BIO 1130MM

An introduction to Organismal biology
Midterm examination
Worth either 15% or 20% of your final grade

Saturday, October 4, 2014

Part A: Multiple choice questions
20 points (1 point/question)

Fill in the bubbles for your name and student number and BIO1130MM for the course code. Fill in the same information in text in the boxes above the bubbles.

Use only a pencil to fill in the answer sheet. If you erase a question be sure to erase all of the pencil mark. Don't place any marks anywhere on the sheet other than where the bubbles are for personal information or your answers.

Do not place any answers on the question sheet.

This is not an open book exam.

CAUTION to minimize paper waste this part of the exam has been printed back to back

NOTE: If you do not fill in the student number and course code as **BIO1130MM** it will be impossible to identify your answer sheet and you will receive a **ZERO** for this part of the exam

MM.1 A Blue Jay carries oak seeds (acorns) from one oak population to another. This is potentially a source of
a. genetic drift.
X b. gene flow.
c. founder effect.
d. natural selection.

MM.2 Which is the correct order for these discoveries in Natural Science: A) the microscope, B) Scala naturae, C) Cell theory, D) Biogeography, E) Publication of the "on origin of Species"
a. A, C, D, B, E.
b. B, A, D, C, E.
X c. B, A, D, E, C
d. A, B, D, C, E.
e. A, B, E, D, C

MM.3 Which of the following does NOT contribute to the study of evolution?
a. population genetics
X b. inheritance of acquired characteristics
c. the fossil record
d. comparative morphology

MM.4 Unlike Lamarckian evolution Darwin's evolutionary scheme was
a. a linear pattern
b. a cladistic pattern
X c. a branching pattern
d. a essentialism pattern

MM.5 If the diploid number of chromosomes of a plant species is 32, how many chromosomes would one expect to find in an autoploid gamete produced by that plant?
a. 0
b. 16
X c. 32
d. 64

MM.6 In a Hardy-Weinberg population with two alleles, A and a, that are in equilibrium, the frequency of allele a is 0.2. What is the frequency of individuals with Aa genotype?
a. 0.80
b. 0.42
c. 0.20
X d. 0.32
e. Genotype frequency cannot be determined from the information provided.

MM.7 A/an _____ occurs when a broken chromosomal segment reattaches to the same chromosome from which it was lost, but in reversed orientation.
X a. inversion
b. translocation
c. duplication
d. aneuploidy

MM.8 Abiotic factors include
a. sunlight.
b. wind speed.
c. temperature
X d. all of the above.

MM.9 According to the transmutation of species principle of use and disuse, the form of body parts in offspring
a. is not changeable.
b. is the result of natural selection.
X c. is the result of how much the offspring uses a particular body part.
d. is inherited based on phenotypic changes that occur in parents during their lifetime

MM.10 What is an important evolutionary advantage of sexual reproduction?
a. the production of haploid offspring
b. being able to produce large eggs
X c. the generation of genetic variability
d. producing offspring identical to the parents

MM.11 The wings of birds, the forelegs of pigs, and the flippers of whales are examples of
a. vestigial structures
X b. homologous structures
c. acquired characteristics
d. artificial selection

MM.12 Which type of evolutionary phenomenon can best be summed up with the phrase "Same problems lead to similar solutions?"
a. gene flow
b. divergence
c. natural selection
X d. convergence

MM.13 The Muslim scholar Al-Dinawari is best known for his biological work on:
X a. A list of plants with descriptions of each plant's life cycle.
b. A list of plants that included a pharmaceutical index of their importance - it was in use until the late 18th century.
c. His book the canon of medicine that integrated the works of Greek, Indian and Muslim physicians.
d. Introduction of the scientific method.

MM.14 Which of the following examples correctly demonstrates Darwin’s mechanism for evolution?
a. Giraffes necks became longer over many generations as they stretched to reach leaves higher in trees, and passed the longer stretched neck on to their offspring.
X b. Those ancestors of woolly mammoths born with slightly more hair survived and reproduced at a higher rate in cold weather than those born with less hair.
c. As evolution progressed, ape mothers gave birth to human babies.
d. Mutations caused white moths to become black when smoke from industry coated tree trunks with soot.

MM.15 This greek philosopher published 10 books in plant biology in which he classified the plants using differences in reproductive anatomy.

a. Socrates
b. Plato
X c. Theophrastus
d. Hippocrates

MM.16 The modern father of taxonomy was

a. Charles Darwin
b. Charles Lyell
X c. Carolus Linnaeus
d. Jean Baptiste de Lamarck

MM.17 If a dominant allele is found in 70% of the gene pool of a population the Hardy-Weinberg equation predicts that the percentage of the the next generation with be homozygous dominant?

a. 21%
b. 42%
X c. 49%
d. 9%
e. None of the above

MM.18 According to the binomial system of nomenclature, the *vexens* in *Aedes vexans* refers to

X a. Species
b. Genus
c. Family
d. Class

MM.19 Null models or hypothesis predict what scientists would see if _____.

a. their hypothesis was true
X b. a factor had no effect
c. the factor under investigation was responsible for the effect
d. the trait under investigation was not heritable

MM.20 After Phylum and Class comes this taxon.

a: Family
b: Genus
c: Species
X d: Order