

BIO 1130MM

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

Saturday, October 1, 2016

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.

No calculators permitted.

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

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Multiple choice questions - Place your answers on the answer sheet

MM.1 Abiotic factors include

- a. sunlight.
- b. wind speed.
- c. temperature

d. all of the above.

MM.2 Who proposed that organisms could be organized into a great chain of being?

- a. Lamarck
- b. Wallace
- c. Darwin
- d. Linnaeus

e. Aristotle

MM.3 A controlled experiment is one in which

- a. the experiment is repeated many times to ensure that the results are accurate.
- b. the experiment proceeds at a slow pace to guarantee that the scientist can carefully observe all reactions and process all experimental data.

c. there are at least two groups, one of which does not receive the experimental treatment.

- d. there is one group for which the scientist controls all variables.
- e. there are at least two groups, one differing from the other by two or more variables.

MM.4 The biological species concept relies primarily on the species' ability to

- a. have greater longevity.

b. produce fertile offspring.

- c. intermingle with other species.
- d. live in a variety of habitats.

MM.5 Which of the following statements is NOT compatible with Darwin's theory?

- a. Evolution has altered and diversified ancestral species.

b. Evolution occurs in individuals rather than in groups.

- c. Natural selection eliminates unsuccessful variations.
- d. Evolution occurs because some individuals function better than others in a particular environment.

MM.6 When two organisms do not mate due to the fact that they mate at different times of the year, it is known as

- a. mechanical isolation.

b. temporal isolation.

- c. ecological isolation.
- d. gametic isolation.

MM.7 Monophyletic groups have this number of ancestors.

a. one

- b. the number is unknown
- c. two
- d. it could be any number more than two

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MM.8 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.9 What was the species concept most used by Linnaeus?

- X a. morphological**
- b. ecological
- c. biological
- d. phylogenetic

MM.10 The biological species concept cannot be applied to two possibly different species that are _____.

- X a. asexual**
- b. sexual
- c. similar
- d. plants

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 Some molecular data place the giant panda in the bear family (Ursidae) but place the lesser panda in the raccoon family (Procyonidae). Consequently, the morphological similarities of these two species are probably due to

- a. inheritance of shared derived characters.
- X b. possession of analogous structures.**
- c. sexual selection.
- d. possession of shared primitive characters.
- e. inheritance of acquired characteristics

MM.13 The first classification of plants created during the Greek and Roman ages divided the plants into groups based on:

- a: seed morphology
- b: the shapes of the leaves of the plant
- c: their flowers
- X d: the reproductive structures of the plant.**

MM.14 Georges Curvier, a founder of paleobiology, suggested that abrupt changes in rock layers and the fossils they contained represent _____.

- a. layers from periods of great colonization of new species
- b. layers of gradual steady accumulation of sediments and dead organisms
- X c. layers deposited when many organisms died in local catastrophes**
- d. layers of descendants of species found in deeper layers

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- MM.15 Which of the following taxon categories has the highest number of species in it?
- a. Genus
 - b. Family
 - c. Order
 - X d. Phylum**
- MM.16 The phylogenetic species concept looks at both the
- a. species response to adverse conditions and genetic data.
 - b. environmental adaptations and morphology.
 - c. genetic data and environmental adaptations.
 - X d. morphology and genetic data.**
- MM.17 Which reproductive isolating mechanism separates a pair of species that routinely interbreed but never produce fertilized eggs after mating?
- a. mechanical
 - b. postzygotic
 - X c. gametic**
 - d. hybrid breakdown
- MM.18 You are studying lizards in the field. The range of the northern population, species 1, overlaps the range of the southern population, species 2. You find hybrids in the zone of overlap. What is happening?
- a. the postzygotic isolating mechanisms aren't working.
 - b. hybrids are best adapted to this region where overlap occurs.
 - c. reinforcement is occurring.
 - X d. there is not enough information to decide what is happening.**
- MM.19 Which of the following combinations represent prezygotic mechanisms of isolation?
- a. hybrid sterility and temporal isolation
 - b. mechanical and hybrid breakdown
 - c. hybrid breakdown and gametic isolation
 - X d. mechanical and temporal isolation**
- MM.20 The study of similarities and differences in early development of animals is called
- X a. comparative embryology.**
 - b. descriptive embryology.
 - c. descriptive anatomy.
 - d. protostomology.
 - e. comparative analogy.