Name KEY

MACROEVOLUTION POP QUIZ

(2) 1. **Describe an example of coevolution. Name the two species involved and the selective pressure driving the evolution for each.**

Bat + Cuban rain forest vine - bat uses echolocation to find blossoms (nectar) plant has dish-shaped leaves to capture + increase the echo.
Selective pressure = food source for bat, pollination for plant

Tree shrew + pitcher plant - shrew feeds on nectar on underside of leaves, defecates into plant, leaving nitrogen-rich feces for plant to consume.
Selective pressure = food source for shrew, growth of plant

(1) 2. **Which of the following is NOT a prezygotic isolating mechanism? (Circle correct answer)**

Behavioral ✓ Temporal ✓ (Spatial) Ecological ✓ Gametic Mortality ✓ Mechanical ✓

(2) 3. **If a horse and a donkey mate, they produce a mule. Why are they still considered two separate species?**

Horses + donkeys produce a mule, which is sterile. A species isn't considered the same unless it can produce viable, fertile offspring. Mules are a hybrid of two species. Horses have 64 c'somes and donkeys have 62; there is enough genetic divergence between horse + donkey DNA sequences to be separate species.
Mule cannot pass on its genes to the next generation.

(3) 4. **Describe the three types of speciation and how they each result in the production of new species.**

Allopatric - speciation arises from physical separation between populations.

Sympatric - there are no physical barriers, but speciation occurs between two groups (maybe non-random mating). reproductively isolated

Parapatric - no specific barrier to gene flow, but population does not mate randomly; more likely to mate w/ neighbors geographically. (conserves energy)

(2) 5. **Describe the Gradualism and Punctuated Models of speciation. Which do you think is the best and why?**

Gradualism - evolution has a fairly constant rate, new species arise by gradual transformation of ancestral species;

Punctuated - most species experience little change for most of their geological history (stasis); evolution occurs in rare, rapid, localized events of branched speciation.