Name: _________________________________

1. In the space provided, briefly define or give the significance of the following terms (2 pts. each):

   Heterodont:

   *Sorex:*

   Cynodonts:

   Renal artery:

   *Auskrhibosphenos:*

   Tympanic bone:

   Dorsal pallium:

   Anterior coracoid:

   Multituberculates:

   Frugivorous:

2. List six hard anatomy characters unique to mammals (6 pts.)
3. Vertebrate paleontologists used to use a key-character approach for defining Mammalia. Explain the approach (4 pts.) and why it was abandoned (6 pts.).

4. The genus *Repenomamus* is a recently discovered fossil mammal. What is its relevance to mammalian evolution (8 pts.)?
5. Diagram the condition of the temporal regions of (A) a stem amniotes (5 pts.) and (B) an early synapsid (5 pts.). Include the location of attachment of jaw-closing musculature (2 pts.).

6. To what family do the following genera belong (8 pts.).

   Manis:

   Trachops:

   Elephas:

   Giraffa:

   Gorilla:

   Didelphis:

   Reithrodontomys:

   Sarcophilus:
7. *Notoryctes* exhibits what type of specialization (2 pts.)? List three adaptations typically associated with this (1 pt. each). What is another genus with these adaptations (1 pts.).

8. How do chorionic gonadotropins contribute to the disparity in diversity (between metatherians and eutherians (just focus on species numbers 10 pts.)?
9. Gigantothermy is central to the Size Refugium Hypothesis for the evolution of mammals. Please explain this concept (8 pts.) and its relevance to the hypothesis (12 pts.).