

Study Guide for Exam-II

Review the assigned reading from the Jurmain *et al.* text (Chs. 5-8) and the lecture handouts/notes. Specific items of review should include:

1. Evolution of the vertebrates.
2. What is the biological species concept (BSC) and how does it compare with the evolutionary species concept? Be able to contrast the two (a diagram may help).
3. Review the principles of taxonomy and classification: hierarchal classification, rule of priority, type designation, binomial nomenclature. Review (memorize) short classification of primates and know the common (and some formal) names of representative species (e.g., what are lemurs, lorises, tarsiers, macaques, baboons, colobus monkeys, etc.)
4. Review the major biological and evolutionary features of primate evolution: reproduction, pre- and post-natal care, vision, grasping extremities, brain, limb structure and locomotion.
5. Primate behavior: review the social organization of baboons and chimps discussed in the text; what are the major themes of primate social organization and ways in which primate social organization is organized on ecological and other principles.

Communication in primates. Attributes of human language. Human and nonhuman communication

Tool making in non-human primates. Human tool making/using abilities. Do primates possess culture?

Exam Format: Multiple choice (a single correct answer), short definitions and short answer.

Multiple Choice: Some examples are provided.

Definitions: Be able to define, contrast, explain and/or provide examples of important terms presented in lecture and in the text. Use the handouts as guide. Here are some examples taken mainly from the text:

<b>Chapter 5.</b>	clade	species
<b>(Microevolution: Processes of Vertebrate and Mammalian Evolution)</b>	phylogenetic tree	sympatric (or non-geographic) species
	cladogram	biological species concept
adaptive radiation	phylogenetic species	evolutionary species
cerebrum	sexual dimorphism	paleospecies
Chordata (Chordates)	derived (modified) traits	taxon
epochs	shared derived traits	category
geological time scale	analogous	evolutionary systematics
heterodontism	homologous	taxonomy
homiothermy	speciation	classification
Metazoa	vertebrates	hierarchal classification
neocortex	viviparous	speciation
primitive trait (ancestral)	Lobefins	phylogenetic tree
punctuated equilibrium	amniotic egg	cladogenesis
phenetics	<i>Amphioxus</i>	anagenesis
cladistics	<i>Therapsida</i>	binomial nomenclature
	allopatric (or geographic)	

rule of priority

## **Chapter 6 (Overview of Primates)**

adaptive niche

anthropoid

arboreal

Callithricidae

Cebidae

Cercopithecidae

cercopithecines

colobines

diurnal

estrus

frugivorous

Hominidae

hominoid

homology

Hylobatidae

ischial callosities

macaque

nocturnal

opposability

Pongidae

postorbital bar

prehensility

prosimian

rhinarium

haplorhine

Strepsirhini

Platyrrhini

Catarrhini

Hominoidea

visual predation theory

arboreal theory

retina

cones/rods

incomplete decussation

macula lutea

fovea centralis

cerebral cortex

occipital lobe

temporal lobe

parietal lobe

visual center

secondary association area

association cortex

vertical clinging leaping

brachiation

quadrupedalism

bipedalism

opposability

pentadactyl

## **Chapter 7 (Primate Behavior)**

affiliative

autonomic

communication displays

ecological

alloparenting

altruism

artificially provisioned

crepuscular

diurnal

dominance hierarchies

grooming

mother-infant relationship

nocturnal

polyandry

sociobiology

socioecology

reproductive strategies

ritualized behavior

sexual selection

r-selected

k-selected

home range

free ranging

philopatric

paradigm

## **Chapter 8 (Primate Models for Human Evolution)**

Altruism

Anthropocentric

Biological continuum

Conserved

Conspecifics

life history

allometry

core area

culture

encephalization

motor cortex

territories

conspecifics

cultural tradition

cortex

Short Answer Questions - Some examples:

1. Define biological (BSC) and evolutionary species. Give an example.
2. How do species form? What is the process called? What is the difference between sympatric and allopatric species?
3. Name at least 5 major anatomical-behavioral trends that are characteristic of primate evolution.
4. Provide a short classification of primates showing the major taxa and some common names for each.
5. Name at least 4 problems early vertebrates had to overcome for a successful and full time commitment to life on land.
6. What are the 3 subclasses of mammals and what distinguishes them the most?

SAMPLE MULTIPLE CHOICE QUESTIONS

1. Similarities based on descent from a common ancestor are:
  - a. analogies.
  - b. discrepancies.
  - c. homologies.
  - d. phrenologies.
2. Apes and hominids belong to the category:
  - a. Homonoidea.
  - b. Anthropeidea.
  - c. Hominidae.
  - d. a and b.
  - e. b and c.
3. Cartmill's alternative to the arboreal theory as an explanation of primate origins is called the:
  - a. visual-predation hypothesis.
  - b. diurnal activity theory.
  - c. omnivorous/browsing hypothesis.
  - d. savanna/grass-eating theory.
  - e. seed-eating hypothesis.
4. Which of the following is not a prosimian?
  - a. lemur
  - b. macaque
  - c. tarsier
  - d. loris
  - e. bushbaby
5. The dental formula characteristic of Old World anthropoids is:
  - a. 1-1-3-3.
  - b. 2-1-2-3.
  - c. 2-1-3-3.
  - d. 3-1-4-3.
  - e. 2-1-3-2.
6. Which of the following is a classification of a primate locomotory pattern?

- a. vertical clinging and leaping
  - b. quadrupedalism
  - c. bipedalism
  - d. all of these
  - e. a and b only
7. The adaptive value of a harem group may be that:
- a. where food is scarce, such a group would consume less.
  - b. if predators are not a problem, one male may be adequate.
  - c. neither of these.
  - d. both of these.
8. An interesting parallel between wolves and what early hominids may have been like is:
- a. division of labor.
  - b. home base.
  - c. close mother-infant relationship.
  - d. all of these.
9. There is some evidence that chimpanzees may practice:
- a. cannibalism.
  - b. a sexual division of labor.
  - c. predation.
  - d. all of these.
10. The relationship between specific environmental features and the social behavior of primates is the discipline of:
- a. sociobiology.
  - b. biosociology.
  - c. socioecology.
  - d. sociolinguistics.

GOOD LUCK!

ANSWERS TO MULTIPLE CHOICE:

- |    |   |     |   |
|----|---|-----|---|
| 1. | C | 6.  | D |
| 2. | D | 7.  | D |
| 3. | A | 8.  | D |
| 4. | B | 9.  | D |
| 5. | B | 10. | C |