

Study Guide for Exam-III

General: The final exam covers everything since the last exam: Chapters 9-14, Ch. 18, & Appendix C in Jurmain *et al.*, and all lectures since the last exam.

Exam format: Approximately 90 multiple choice (a single correct answer) questions and a Map question.

Review the following:

1. Review the relative and absolute dating techniques and examples of each (e.g., stratigraphy, K-Ar, C-14, etc.).
2. Primate evolution: what is the fossil evidence for primate evolution? Review the current fossil specimens available for each of the epochs of the Tertiary, their general morphological features, taxonomy, spatial and temporal distribution. Also, be able to summarize the various adaptive radiations (i.e. first prosimian, anthropoid, hominids etc.) which account for primate evolution from Paleocene to Miocene/Pliocene times.
3. Hominid evolution: review the broad outline of human evolution as interpreted from the fossil record: *Sahelanthropus*, *Ardipithecus ramidus*, Orrorin, *Australopithecus anamensis*, *A. afarensis*, *Kenyanthropus*, *A. garhi*, *A. africanus*, *A. robustus-boisei*, *A. aethiopicus*, genus *Homo* (*H. habilis*, *rudolfensis*), *Homo erectus*, *H. ergaster*, archaic humans [*H. heidelbergensis*, Neanderthals (*H. neanderthalensis*)] , anatomically modern *Homo sapiens*. Know sites, fossils and a few of the personalities who discovered them; dates of fossils; morphological features of major fossil groups (e.g., *A. robustus* vs. *A. africanus*, or *H. erectus* vs. *H. sapiens*); associated cultural behavior; phylogenetic-taxonomic interpretations.
4. What are the current models to explain the appearance of anatomically modern humans. What is the nature of the evidence (fossil and molecular), dates, implications etc.?
5. Study all the maps in Jurmain et al. and know the location of ape and human fossil sites.

Multiple choice: Some examples have been provided. Questions will be drawn from both lecture and textbook reading You'll be examined on some things from the text not specifically mentioned in lecture and *vice versa*.

Map question: Know where important primate/human fossil sites are located on 3 base maps used on the quizzes (matching the place indicated on map with the site name) e.g., Taung, La Chapelle, Tabun, Fayum, Hadar, Olduvai, Trinil, Zhoukoudian etc. There will be about 20 items on the map question. Refer to the maps distributed during quizzes and the maps in your textbook.

Some terms and concepts from the textbook that are useful in preparing for this exam:

Chapter 9 (Fossil primates).

Adapis
Apidium
Necrolemur
Plesiadapis
Carpolestes
Parapithecus
Aegyptopithecus
Adapidae
Bilophodont molar
Cenozoic
Dryopithecus
Pliopithecus
Ouranopithecus
Branisella
Rooneyia
Teilhardina
Ramapithecus
Eocene
Fayum
Gigantopithecus
Miocene
Oligocene
Paleocene
Oligopithecus
Kenyapithecus
continental drift
plate tectonics
chronometric dating
Laurasia
Gondwanaland
Pangaea
Tethys Sea
angiosperms
Permian extinctions
sectorial premolar
Sivapithecus
Y-5 molar
Bilophodonty
Dental formula Lufeng
Omomyidae
Proconsul
Catarrhine

Chapter 10 (Paleoanthropology).

relative dating
superimpositioning
tree ring dating
geological time
biostratigraphy
stable carbon isotopes
thermoluminescence

[Other terms are in the lecture handouts and from your notes]

Pittdown
Artifacts
Absolute dating
Louis Leakey
Mary Leakey
Olduvai Gorge
Paleoanthropology
Paleoecology
Paleomagnetism
Paleontology
phytoliths
microliths
microwear
core
flake
direct percussion
pressure flaking
protohominid
Potassium-argon dating
Stratigraphy
Acheulian
C-14
Chronometric
half-life
taphonomy

Chapter 11 (Hominid origins).

Sahelanthropus
Orrorin,
Ardipithecus ramidus
Australopithecus anamensis
Kenyathropus platypos
Australopithecus aethiopicus
Australopithecus afarensis
Australopithecus africanus
Australopithecus boisei
Australopithecus garhi
Australopithecus robustus
Bipedalism
"Black Skull"
Breccia
Dietary hypothesis
East Lake Turkana
Robert Broom
"Robust" australopithecine
Sterkfontein
australopithecine
Australopithecus
Swartkrans
Taung
"Zinj"
ER 1470
Gracile/robust australopithecines

Sagittal crest
Sectorial
Hadar
Piltdown
Homo habilis/rudolfensis
Kromdraai
Laetoli
Afar Triangle
endocast
Plio-Pleistocene
foramen magnum
sectorial sagittal crest (keel)
Aramis
tectonic movements
ER-3733
Osteodontokeratic
WT 17000
Paranthropus
breccia
early *Homo*

Chapter 12 (*Homo erectus*).

Davidson Black
Franz Weidenreich
Sale
Rabat
Dmanisi
Lantian
Hexian
Sangiran
Ngandong
shovel-shaped incisors
nuchal torus
Atapuerca
Boxgrove
Acheulian
Eugene Dubois
Nariokotome
“*Pithecanthropus*”
“*Sinanthropus*”
Trinil
WT 15000
Zhoukoudian
H. erectus/ergaster
biface
supraorbital torus (tori)
Pleistocene

Chapter 13 (Neanderthals/ archaic *H. sapiens*).

Anatomically modern human beings
Aurignacian
archaic *Homo sapiens*
Neanderthal
H. neanderthalensis
H. heidelbergensis
Homo sapiens sapiens
Broken Hill (Kabwe)
La Chapelle-aux-Saints
La Ferrassie
Teshik-Tash

Laetoli
"Lucy"
Makpansgat
Omo
Raymond Dart
Rift Valley
Levallois
occipital bun
Vertesszöllos
Maba
Dali
Swanscombe
Bilzingsleben
Terra Amata
Neander Valley
Shanidar
Chatelperronian
Mousterian
Krapina
Narmada
Petalona

Chapter 14 (Anatomically modern *H.s.*)

Magdalenean
Solutrean
Multiregional model
Out of Africa or Replacement model
Assimilation model
mt-DNA and mitochondrial Eve
Kalises River Mouth
Border Cave
Qafzeh
Alamira
Aurignacian
burin
Katanda
Skhul
Tabun
Upper Paleolithic
Middle Paleolithic
Cro-Magnon
Lascaux
Kow Swamp
Wadjak
Ordos
atlatl
Venuses
Predmosti

Examples of Some multiple Choice Questions:

1. The earliest definite tools were made of:
 - a. ivory
 - b. wood
 - c. metal
 - d. fiber
 - e. stone

2. The time of the greatest prosimian radiation was during the:
 - a. Paleozoic
 - b. Cretaceous
 - c. Paleocene
 - d. Eocene
 - e. Pleistocene

3. Which of the following is the least related to the rest?
 - a. *Gorilla*
 - b. *Pan*
 - c. *Pongo*
 - d. *Homo*

4. What is the most important Oligocene fossil primate locality in the Old World?
 - a. Gombe Stream Reserve
 - b. Fayum
 - c. Olduvai Gorge
 - d. Indonesia
 - e. all of these

5. The Ramapithecines:
 - a. were mostly Eurasian in distribution
 - b. were probably more adapted to ground foraging than dryopithecines
 - c. include forms that were probably closely related to orangs
 - d. include *Sivapithecus*
 - e. all of these

6. Olduvai Gorge is:
 - a. the site of the first ramapithecine discovery
 - b. situated along the East African Rift Valley system
 - c. in Northern Tanzania
 - d. all of these
 - e. b and c only

7. The first australopithecine was found in:
 - a. Indonesia
 - b. South Africa
 - c. East Africa
 - d. South America

- e. none of these
8. Raymond Dart called the hominid discovered in 1924:
- Australopithecus africanus*
 - Plesianthropus transvalensis*
 - Paranthropus robustus*
 - Telanthropus capensis*
 - all of these
9. If the single-species hypothesis applies, all australopithecine should be classified within:
- either *Paranthropus* or *Australopithecus*
 - either *Australopithecus africanus* or *Australopithecus robustus*
 - Sivapithecus* only
 - Australopithecus africanus* only
 - Telanthropus capensis* only
10. *A. boisei* in East Africa is:
- a very gracile australopithecine
 - an early member of the genus *Homo*
 - not a hominid
 - a very robust australopithecine
 - all of these
11. The important fossil find, ER-3733, is thought to be a representative of:
- A. boisei*
 - H. erectus*
 - H. sapiens*
 - A. africanus*
 - Zinjanthropus*
12. Mindel, Riss, and Wurm are the names of:
- Pleistocene fossils from Europe
 - archaeological sites from the Near East
 - paleomagnetic reversal events
 - Pleistocene glaciers
13. The reason for the term "erectus" in *H. erectus* was the discovery of _____, which indicated the owner stood erect.
- a femur
 - a pelvis
 - foot bones
 - a complete human skeleton
14. The time period in which Neanderthals lived is _____, years ago.
- 1 million - 2 million
 - 300,000 - 125,000
 - 125,000 - 35,000
 - 40,000 - 10,000

15. Anatomically modern human beings appeared about _____, years ago.
- a. 15,000
 - b. 40,000
 - c. 100,000
 - d. 500,000
16. Upper Paleolithic populations were present:
- a. only in Europe
 - b. only in Europe and the Near East
 - c. only in the Old World
 - d. in the Old World and the New World
17. Recent finds in Australia suggest that anatomically moderns entered that continent from Indonesia as early as (select earliest correct date):
- a. 100,000 y.a.
 - b. 35,000 y.a.
 - c. 18,000 y.a.
 - d. 5,000 y.a.

Answers to Multiple Choice Questions

- 1. e
- 2. d
- 3. c
- 4. b
- 5. e
- 6. e
- 7. b
- 8. a
- 9. d
- 10. d
- 11. b
- 12. d
- 13. a
- 14. c
- 15. c
- 16. d
- 17. b