Archaeology and Humanity's Story: A Brief Introduction to World Prehistory

Chapter 2 Test Bank—Humanity's Roots

Multiple-Choice Questions (30)

1. Modern humans are members of the genus _____.
A) *Australopithecus*
B) *Ardipithecus*
C) *Homo**
D) *Paranthropus*

2. *Ardipithecus ramidus* is approximately how old?
A) 100,000 years
B) 1.5 million years
C) 4.4 million years*
D) 3.6 billion years

3. _____: a classification system that divides animal and plant groups into categories based on their evolutionary relationships.
A) Morphology
B) Primatology
C) Taphonomy
D) Taxonomy*

4. Which of these species is farthest removed from us in time?
A) *Ardipithecus ramidus*
B) *Australopithecus afarensis*
C) *Homo habilis*
D) *Sahelanthropus tchadensis**

5. Which of these hominin species was probably the most arboreal?
A) *Paranthropus boisei*
B) *Ardipithecus ramidus**
C) *Homo habilis*
D) *Australopithecus africanus*

6. Which of these species has the largest average brain size (measured in cubic centimeters)?

A) *Homo sapiens**
B) *Homo habilis*
C) *Pan troglodytes*
D) *Sahelanthropus tchadensis*

7. Which genus is associated with “robust” features like a sagittal crest and large molars?
A) *Ardipithecus*
B) *Microtus*
C) *Homo*
D) *Paranthropus**

8. Which primate has been observed “termite fishing” in the wild?
A) Chimpanzees*
B) Gibbons
C) Gorillas
D) Orangutans

9. Ancient hominins most likely made tools from:
A) bone.
B) stone.
C) wood.
D) all of the above*

10. Prior to recent finds in Ethiopia and Kenya, _____ was the oldest known stone tool industry.
A) Acheulian
B) Mousterian
C) Oldowan*
D) Solutrean

11. Chapter 2 discusses the _____ site at Olduvai Gorge.
A) FLK 22*
B) Lomekwi 3
C) Apollo 11 Cave
D) Liang Bua

12. The famous “Lucy” was a member of which species?
A) *Australopithecus afarensis**
B) *Paranthropus robustus*
C) *Sahelanthropus tchadensis*
D) *Zea mays*

13. Chapter 2 focuses primarily on which hominin characteristic?

A) Absolutism
B) Bipedalism*
C) Prognathism
D) Sexual dimorphism

14. To which taxonomic subfamily do you belong?
A) Gorillinae
B) Homininae*
C) Pongidae
D) None of the above

15. Modern humans are generally _____ the earliest hominins.
A) shorter than
B) taller than*
C) the same size as
D) less intelligent than

16. What Tanzanian site included a trail of fossilized *Australopithecus afarensis* footprints?
A) Laetoli*
B) La Venta
C) Lascaux
D) Liang Bua

17. The generic term *australopith* refers to members of what genus (genera)?
A) *Ardipithecus*
B) *Australopithecus*
C) *Paranthropus*
D) All of the above*

18. Which of these hominin species was first discovered in East Asia?
A) *Ardipithecus ramidus*
B) *Australopithecus sediba*
C) *Homo habilis*
D) None of the above*

19. Which of these has not been proposed as a mode of subsistence at FLK 22?
A) Active scavenging
B) Farming*
C) Hunting
D) Passive scavenging

20. Which of these hominin species was first discovered in Europe?
A) *Ardipithecus ramidus*
B) *Australopithecus afarensis*

C) *Homo habilis*
D) None of the above*

21. Oldowan choppers would have been particularly useful for _____.
A) breaking open bones for marrow*
B) throwing at fast-moving prey
C) scraping hair off of hides
D) scaring away carnivores

22. _____ occurs when individuals from two different groups within the same species mate and produce offspring.
A) Gene flow*
B) Genetic drift
C) Mutation
D) Natural selection

23. _____ is when a change occurs in a gene or when other types of errors occur in chromosomes (long strands of genes).
A) Gene flow
B) Genetic drift
C) Mutation*
D) Natural selection

24. _____ is most easily seen when populations become isolated from one another. For example, if a small group moves to a new area, the genes present in that group represent only a sample of the total genes present in their original population.
A) Gene flow
B) Genetic drift*
C) Mutation
D) Natural selection

25. During the late Miocene, much of Africa became _____ and _____.
A) drier; less forested*
B) drier; more forested
C) wetter; less forested
D) wetter; more forested

26. According to one model, the LCA species split into small groups, which remained _____, and large groups, which became _____.
A) bipedal; quadrupedal
B) carnivorous; herbivorous
C) quadrupedal; bipedal*
D) terrestrial; arboreal

27. Where is the sagittal crest located?
A) Ethiopia
B) Finger bones
C) Pelvis
D) Skull*

28. Chapter 2 describes members of the genus *Paranthropus* as our evolutionary_____.
A) ancestors
B) children
C) cousins*
D) siblings

29. A site in the Dikika area of Ethiopia featured animal bones with cut marks dating to _____ years ago.
A) 6000
B) 40,000
C) 2.18 million
D) 3.39 million*

30. Hominin fossils have been found in each of these regions except _____.
A) Central Africa
B) East Africa
C) South Africa
D) West Africa*

True/False Questions (10)

1. The *foramen magnum* is located in the pelvis. (False)

2. The last common ancestor (LCA) of panins and hominins lived about 6.3 – 5.4 million years ago. (True)

3. The first fossils of *Australopithecus africanus* were found at the Taung site in South Africa. (True)

4. The oldest hominin fossils are found in Asia. (False)

5. One of the ancestors of *Homo sapiens* is *Pan paniscus.* (False)

6. The LCA lived during the miocene. (True)

7. Tribe Panini includes all of the following: bonobos, common chimpanzee, and orangutans. (False)

8. The most remarkable part of “Ardi’s” skeletal structure was a grasping big toe. (True)

9. The Oldowan tool industry includes arrowheads. (False)

10. Natural selection is based on the principle that certain features are selected for, selected against, or are neutral. (True)

Short-Answer Questions (10)

1. What archaeological evidence supports pre-*Homo* tool use?

*3.39 million-year-old cut-marked bones in Dikika, Ethiopia, and 3.3 million-year-old stone tools at the Lomekwi 3 site in Kenya.

2. Describe the concept of mosaic evolution using examples from the text.

*“represents a situation in which natural selection acts at different rates of change on various parts of the body. One example in the hominins is the combination of habitual bipedalism with ape-like long arms and curved finger bones. In this case, natural selection acted earlier on structural changes leading to bipedalism than it did on structural changes to the arm and hand” (Olszewski 2019:48).

3. What do we know about the diet of the genus *Paranthropus*? What evidence are these interpretations based on?

*Megadont teeth suggest specialization for a diet of hard foods. However, recent enamel studies indicate a broader diet including sedges, termites, grass roots, grasshoppers, bird eggs, lizards, grass seeds, rodents, small antelope, and so forth.

4. What kinds of tool use have been observed among modern primates (humans excluded)?

*“Termite fishing” by chimps in Assirik and Gombe. Chimps cracking nuts with a hammerstone in Bossou and the Taï Forest. Orangutans processing fruits with sticks on the island of Sumatra.

5. What do Oldowan tools reveal about the cognitive capacity of *Homo habilis*?

*They understood the process of selecting good tool stone, showed great foresight by transporting stone far from its source, and understood the mechanics of producing thin, sharp flakes.

6. Can you briefly explain why we are *not* descended from chimpanzees?

*Contrary to popular opinion, we share a common ancestor with chimpanzees (LCA), but we are not, ourselves (hominins), descended from modern chimps (panins). They are our evolutionary cousins.

7. We often describe hominin skulls in terms of how "ape-like" or "human-like" they are. What are some ape-like features of early hominin skulls?

*Low, sloping foreheads, flaring cheekbones, prognathic faces, lack of a protruding chin, generally more "robust" features like browridges, sagittal crests, and so on.

8. How might bipedalism aided in the *thermoregulation* of early hominins?

*By exposing less surface area to the sun overhead and more surface area to horizontal breezes and air flow.

9. Describe the evolutionary process of genetic drift.

*Random (i.e., nonselective) changes in allele frequency in a population, most clearly represented by the Founder's Effect, usually only important in small breeding populations.

10. What is the purpose of taxonomy?

*To classify and categorize living things based on their evolutionary relationships to one another.

Essay Questions (5)

1. Chapter 2 discusses several possible explanations for the origin of bipedalism. What do you think was the most significant advantage bipedalism provided for our ancestors? What evidence supports your choice?

*Answers will vary (see pp. 42–43): availability of hands for manipulating objects and provisioning offspring, thermoregulation, energetic efficiency of bipedalism, sight distance increases.

2. Natural selection is a relatively simple, but often misunderstood, evolutionary process. How would you explain it, simply yet accurately, to someone who has no previous experience with biology?

*Individuals who are better-adapted to their environments tend to have more offspring, increasing the proportion of adaptive traits in a population.

3. Bones may be transported and modified by many natural and cultural processes. What are some ways that archaeologists can discern natural patterning from cultural patterning?

*Bones can be examined for weathering damage, carnivore damage, damage produced by hominin butchery (including its location and diagnostic attributes). Species and skeletal part profiles may be informative, and so forth.

4. Imagine that modern humans had all of the attributes that we actually have, but were fully *quadrupedal*. Would life as we know it be possible? How would the world be a different place?

*This question requires imagination, and an understanding of bipedalism, but may inspire a variety of different answers. Ideally, it will help students recognize how fundamental upright walking is to our existence.

5. The paleoanthropological record is dominated by stone. Do you think our ideas about early hominin culture would change if we had perfect preservation of all materials? How so?

*This should prompt the recognition that archaeology is often the study of stones and bones, but living people make use of many more perishable materials. This preservational bias likely results in an overemphasis on hunting (at the expense of gathering) large game (at the expense of smaller animals, plant foods), and so forth.