

**MULTIPLE CHOICE. 1 point each. Choose the one alternative that best completes the statement or answers the question.**

- 1) \_\_\_\_\_ can be defined as variant forms of an element useful for dating and paleoclimate studies.
  - A) Isotopes
  - B) Radiometry
  - C) Half-life
  - D) none of these
  
- 2) Chronometric dating techniques provide
  - A) an age estimate in years before the present
  - B) the relative age of an object
  - C) information about the magnetic polarity of strata
  - D) the age of an object relative to the items found with it
  
- 3) Radiocarbon dating is the primary technique for dating
  - A) volcanic deposits
  - B) organic material
  - C) uranium decay
  - D) obsidian
  
- 4) Studying ancient ecological circumstances and vegetation includes investigating
  - A) ancient pollen
  - B) oxygen isotopes
  - C) stable carbon isotopes
  - D) all of these
  
- 5) A high  $^{18}\text{O}/^{16}\text{O}$  ratio (more  $^{18}\text{O}$  and less  $^{16}\text{O}$ ) in the shells of marine animals indicates
  - A) colder temperatures and higher sea levels
  - B) warmer temperatures and higher sea levels
  - C) colder temperatures and lower sea levels
  - D) higher temperatures and lower sea levels
  
- 6) \_\_\_\_\_ is a common radiometric method for dating volcanic deposits.
  - A) Electron spin resonance
  - B) Potassium-Argon dating
  - C) Radiocarbon dating
  - D) Stratigraphic dating
  
- 7) Which of the following is the principle behind a dating technique using comparison of fossils?

- A) the principle of original verticality
  - B) the principle of cross-cutting relationships
  - C) the principle of superposition
  - D) the principle of faunal succession
- 8) The term Hominid
- A) recently replaced hominoid. The term includes all extinct human ancestors after the split from the last common ancestor with chimps
  - B) refers to all primate ancestors of humans
  - C) originally referred to humans and all extinct ancestors after the split from the last common ancestor with chimps
  - D) is based on a phylum level distinction between humans and the great apes
- 9) The fundamental adaptation that would be expected in the first hominin ancestor is
- A) upright posture
  - B) increased cranial capacity
  - C) complex social interaction
  - D) tool use
- 10) Compared to the pelvis of a quadruped, the pelvis of a biped is
- A) almost the same except for the number of bones
  - B) elongated and fan-shaped
  - C) broader and bowl-shaped
  - D) extremely dense and heavy
  - E) none of the above
- 11) While the femur of a quadruped is straight, the femur of a biped is
- A) reduced at the knee
  - B) curved
  - C) angled inward to the knee
  - D) none of the above
- 12) Over time, hominin legs lengthened (relative to trunk length) which
- A) increased stride length and efficiency
  - B) made climbing more difficult
  - C) decreased the dangers presented by predators
  - D) increased the energy requirements of hominids
- 13) The leg attained modern human proportions with the origin of
- A) *Homo ergaster (erectus)*
  - B) Anatomically modern *Homo sapiens*
  - C) *Australopithecus afarensis*
  - D) *Ardipithecus ramidus* and/or *ramidus kadabba*

- 14) Bipedal walking is more energy efficient
- A) than arboreal locomotion in monkeys
  - B) than knucklewalking in Chimps
  - C) than quadrupedalism in dogs
  - D) when running on a hard surface
- 15) Which of the following is NOT one of the hypotheses for bipedalism covered in class?
- A) bipeds expose less of their bodies to the sun than quadrupeds
  - B) bipeds have an advantage over quadrupeds when it come to climbing trees to sleep at night
  - C) the blood flow system bipeds have to move blood against gravity also works to cool the brain
  - D) body hair inhibits the cooling effect of transpiration from evaporation of sweat off the skin

- 16) Which of the following is NOT an aspect of (Isbell and Young's) energetic efficiency model for bipedalism?
- A) increased efficiency of bipedal locomotion
  - B) an increase in body size
  - C) fusion-fission social groups in chimps
  - D) an increase in forest fragmentation
- 17) According to other models, (Dean Falk and Glenn Conroy) bipedalism could have evolved because it was adaptive for hominins to
- A) carry their infants
  - B) see over tall grasses
  - C) dissipate heat
  - D) make it possible to reach fruit in trees
- 18) Which of these statements was part of the heat stress model for bipedalism?
- A) humans are hairless and sweating is a good way to lose heat in hairless mammals
  - B) some primates develop more body hair to deal with life on the savanna (rather than less hair)
  - C) Paleoclimate data suggests that hominins lived in forests and woodlands, not on the savanna
  - D) many OWM who live on the savanna are quadrupeds, suggesting that the earliest hominins were not upright walkers either
- 19) The dental arcade of modern humans is \_\_\_\_\_, while that of apes' is \_\_\_\_\_.
- A) prognathic/curved
  - B) a parabola/U-shaped
  - C) larger/smaller
  - D) U-shaped/a parabola
- 20) The \_\_\_\_\_ is a space in the tooth row that allows the canine to slide past the third premolar and to be sharpened each time the mouth is closed. This is a feature of apes and is lost in hominin evolution.
- A) mandible
  - B) maxilla
  - C) double cusp
  - D) diastema
- 21) Throughout hominin evolution
- A) brain size increases while facial size long remains constant
  - B) facial size decreases while brain size long remains constant
  - C) brain size and facial size vary between larger and smaller
  - D) brain size increases while facial size decreases
- 22) The reduction or loss of cranial crests in hominin species represents
- A) the de-emphasis on protection for the brain

- B) a reduction in the size of neck muscles associated with quadrupedalism
  - C) a de-emphasis on chewing as well as a brain size expansion.
  - D) the need for greater room for muscles associated with chewing
- 23) The fossil evidence of the earliest hominins has come from \_\_\_\_\_.
- A) the Congo Basin in Central Africa
  - B) East Africa and Tchad
  - C) South African caves
  - D) Western Africa
- 24) The Great Rift Valley is the result of \_\_\_\_\_.
- A) ancient floods
  - B) tectonic activity
  - C) river erosion
  - D) volcanic eruptions
- 25) Early fossil hominins can be recognized by \_\_\_\_\_.
- A) bipedal characteristics and greatly reduced facial prognathism
  - B) increased cranial size as well as bipedal characteristics
  - C) Increases in the size of the C/P3 complex along with a U-shaped dental arcade
  - D) bipedal characteristics, reduced canine size, and loss of the honing complex
- 26) The Toumai fossil, or *Sahelanthropus tchadensis* was discovered in \_\_\_\_\_ and is \_\_\_\_\_ years old.
- A) Tchad; 5-8 million
  - B) Tanzania; 2.5-5 million
  - C) Ethiopia; 8-10 million
  - D) Mali; 4.4-6 million
- 27) The site where Toumai was found was
- A) an area of rolling grassland
  - B) a dry, lightly forested area near a lakeshore
  - C) a desert area
  - D) an open semi-arid area
- 28) *Orrorin tugenensis* dates to approximately \_\_\_\_\_ and was discovered in \_\_\_\_\_.
- A) 6 mya/Kenya
  - B) 4 mya/South Africa
  - C) 4 mya/Tanzania

- D) 2 mya/Ethiopia
- 29) Martin Pickford and Brigitte Senut have claimed *Orrorin tugenensis* to be a biped based on
- A) spine fragments and a knee
  - B) femoral fragments
  - C) on a nearly complete pelvis
  - D) tarsal and metatarsal fragments
- 30) The famous fossil specimen "Lucy" is a representative of which Australopithecine species?
- A) *afarensis*
  - B) *africanus*
  - C) *anamensis*
  - D) *garhi*
- 31) Lucy was discovered by Donald Johanson at Hadar, in the Awash Valley of \_\_\_\_\_ in 1974.
- A) South Africa
  - B) Ethiopia
  - C) Tanzania
  - D) Kenya
- 32) The cranial capacity range for *Australopithecus afarensis* is
- A) 320-450 cc
  - B) 500-650 cc
  - C) 600-850 cc
  - D) 900-1300 cc
- 33) The \_\_\_\_\_ is a bony crest running lengthwise down the center of the cranium on the parietal bones for the attachment of the temporalis (chewing) muscles.
- A) temporalis maxilis
  - B) mandibular attachment
  - C) sagittal crest
  - D) compound temporonuchal crest
- 34) Thinking back to the behavioral ecology of other non-human primates, a high degree of sexual dimorphism in *A. afarensis* suggests
- A) that individuals of the species lived alone and hunted other animals for food
  - B) that the males may have built nests and spent time in the trees while females patrolled the territory and protected the home range
  - C) that the species may have lived in multi-male, multi-female groups where males competed for access to females

- D) that the social group was comprised of monogamous family units
- 35) Although accomplished as a biped, certain features such as curved phalanges in the toes and fingers suggest that *Australopithecus afarensis*
- A) could have had difficulty walking
  - B) were also accomplished brachiators
  - C) may have been partially arboreal
  - D) could swim quite well
- 36) The footprints at Laetoli were made by
- A) *Australopithecus afarensis*
  - B) *Australopithecus robustus*
  - C) *Australopithecus boisei*
  - D) *Australopithecus africanus*
- 37) The oldest known stone tools (Oldowan tools) come from Ethiopia and date to about
- A) 1.7 million years ago
  - B) 2.5 million years ago
  - C) 2 million years ago
  - D) 3 million years ago
- 38) The earliest stone tools were made by
- A) *Homo habilis*
  - B) *Paranthropus boisei*
  - C) *Australopithecus garhi*
  - D) one or all of the above
- 39) The Taung child was 'discovered' by \_\_\_\_\_ belongs to which hominid species?
- A) Eugene Dubois; *Homo erectus*
  - B) Don Johanson; *Australopithecus bahrelghazali*
  - C) Louis Leakey; *Australopithecus afarensis*
  - D) Raymond Dart; *Australopithecus africanus*
- 40) Most hominin fossil finds in southern Africa come from caves because
- A) hominin bones fell into caves through holes in the ceiling after they were eaten by leopards
  - B) hominins in southern Africa tended to live in caves
  - C) hominins seemed to have crawled into caves to die
  - D) predators like leopards often dragged hominins they had killed into caves
- 41) In eastern Africa fossil finds are often dated using \_\_\_\_\_ dating techniques,

while in southern Africa fossils are usually dated using \_\_\_\_\_ techniques.

- A) relative/absolute
- B) radiocarbon/type-analysis
- C) absolute/relative
- D) seriation/absolute

42) Compared to *A. afarensis*, *A. africanus* has more derived traits, such as

- A) *A. africanus* shows less facial prognathism
- B) *A. africanus* has larger cranial crests (sagittal and nuchal crests)
- C) *A. africanus* has smaller anterior teeth
- D) *A. africanus* has a cranial capacity of 550-650 cc

43) Robust australopithecines exhibit a group of adaptations that indicate they were specialized for

- A) carrying large loads over distances
- B) hard object feeding
- C) defending themselves against predators
- D) hunting small to medium sized animals

44) The robust australopithecines are today sometimes referred to by the genus name

- A) *Orrorin*
- B) *Paranthropus*
- C) *Zinjanthropus*
- D) *Aethiopicus*

45) As part of their dietary adaptation, robust australopithecines have

- A) thick enamel and large post-canine (posterior) teeth
- B) robust mandibles, sagittal, and nuchal crests
- C) postorbital constriction and a large brow ridge
- D) all of the above

- 46) *Australopithecus robustus* represents robust australopithecines in
- A) Kenya
  - B) southern Africa
  - C) Ethiopia
  - D) east Africa
- 47) At 2.5 million years ago \_\_\_\_\_ were all contemporaries in **East** Africa.
- A) *A. robustus*, *A. africanus* and *A. garhi*
  - B) *A. boisei*, *A. anamensis*, and *O. tugenensis*
  - C) *P. aethiopicus*, *A. anamensis*, and *A. africanus*
  - D) *Australopithecus*, *Paranthropus*, *H. habilis* and *H. rudolphensis*
- 48) The hominid that is the direct ancestor of the genus *Homo* is
- A) *K. platyops*
  - B) *H. habilis*
  - C) *A. africanus*
  - D) not certain
- 49) Compared to the Australopithecines, members of the genus *Homo*
- A) have smaller teeth and bigger brains
  - B) have bigger teeth and smaller body size
  - C) have smaller body size and bigger brains
  - D) none of the above
- 50) The KNM-ER 1813 fossil is a specimen of early *Homo* that has a smaller cranium but more robust muscle attachments than KNM-ER 1470. This is the reason that
- A) *Homo rudolfensis* and *Homo habilis* were split into two separate species
  - B) KNM-ER 1470 has a bigger brain and bigger teeth than 1813
  - C) both are likely to be the remains of late *Paranthropus*, not ancestral to *Homo*
  - D) *Homo habilis* left Africa

- 51) The Oldowan tool industry involved removing \_\_\_\_\_ from \_\_\_\_\_.
- A) flakes/bifacial axes
  - B) flakes/bones
  - C) flakes/cobblestone cores
  - D) cores/flakes
- 52) The earliest hominin site outside of Africa is in \_\_\_\_\_ and dates to \_\_\_\_\_ years ago.
- A) Israel; 110,000
  - B) the Republic of Georgia; 1.8 million
  - C) China; 500,000
  - D) Indonesia; 7 million
- 53) Which of the following is true of the Dmanisi finds?
- A) they are small-bodied compared to *H. erectus* fossils
  - B) they had very sophisticated Acheulian tools
  - C) they are similar to *H. heidelbergensis* in Germany
  - D) all of these
- 54) *Homo erectus* appeared in Africa about \_\_\_\_\_ years ago.
- A) 8 million
  - B) 180,000
  - C) 18,000
  - D) 1.6 million
- 55) Some paleoanthropologists refer to the earliest *H. erectus* as *H.* \_\_\_\_\_.
- A) *rudolfensis*
  - B) *ergaster*
  - C) *neanderthalensis*
  - D) *paranthropus*

- 56) The *H. erectus* skull has a prominent \_\_\_\_\_ and a(an) \_\_\_\_\_.
- A) metopic keel; nuchal arch
  - B) sagittal crest; occipital bun
  - C) browridge; sagittal keel
  - D) angular torus; arched browridge
- 57) What is the range of *H. erectus* brain size?
- A) 400-600 cc
  - B) 700-900 cc
  - C) 900-1,300 cc
  - D) 1,000-2,000 cc
- 58) The "Nariokotome boy" fossil indicates that *H. ergaster*
- A) was small bodied and big brained
  - B) could grow as tall as modern humans
  - C) had short lower limbs
  - D) none of these
- 59) In Java, Dubois found the calvaria of a
- A) *Australopithecus africanus*
  - B) *Pithecanthropus robustus*
  - C) *Homo habilis*
  - D) *Homo erectus*
- 60) Which of the following describes Acheulean tools?
- A) wooden spear throwing devices
  - B) flakes removed as blades
  - C) bifaced and flaked stone tools
  - D) composite tools made from bone, wood, and stone

- 61) Acheulian tools are remarkable in
- A) their continuity across time and space
  - B) that they are more sophisticated and complex to manufacture than Mousterian technologies
  - C) their resemblance to the Oldowan tradition of Indonesia
  - D) the rapid innovations that drove technological change throughout the Lower Paleolithic
- 62) *H. erectus* meat consumption is associated with
- A) Acheulean technology
  - B) larger bodies
  - C) larger brains
  - D) all of these
- 63) The Middle Pleistocene dates from approximately \_\_\_\_\_ years ago.
- A) 800,000 to 130,000
  - B) 5,000,000 to 2,500,000
  - C) 250,000 to 10,000
  - D) 125,000 to 10,000
- 64) Which of the following is NOT a name for the fossils from the Middle Pleistocene?
- A) *H. erectus*
  - B) *H. heidelbergensis*
  - C) archaic *H. sapiens*
  - D) Australopithecines
- 65) Middle Pleistocene hominins
- A) were descended from Neandertals
  - B) closely resemble some Australopithecines
  - C) are referred to as the "Muddle in the Middle"
  - D) are widely agreed to be a type of *H. habilis*

- 66) The fossils at Atapuerca (Gran Dolina) have been dated to nearly \_\_\_\_\_ years ago.
- A) 8 million
  - B) 8,000
  - C) 800,000
  - D) 800
- 67) The middle Pleistocene hominins from Atapuerca may have been ancestral to
- A) *H. erectus*
  - B) *Homo neanderthalensis*
  - C) *H. heidelbergensis*
  - D) *Homo georgicus*
- 68) Neandertals can be found in
- A) Western Europe
  - B) Western Asia
  - C) both
  - D) neither
- 69) Neandertal remains have been recovered from sites dating between approximately \_\_\_\_\_ years ago.
- A) 130,000 and 1.3 million
  - B) 30,000 and 130,000
  - C) 13,000 and 130,000
  - D) 130,000 and 230,000
- 70) Early depictions of Neandertals portray the hominid as
- A) stooped cave dwellers
  - B) well adapted contemporaries of Pleistocene humans
  - C) suffering from a high frequency of skeletal pathologies
  - D) none of these

- 71) The derived features of Neandertals include
- A) a larger brain than modern *H. sapiens*
  - B) an occipital keel
  - C) a smaller brain than *H. erectus*
  - D) none of these
- 72) Neandertal teeth
- A) show excessive wear and may have been used as tools
  - B) show backtooth dominance and hard object feeding adaptations
  - C) were much smaller than those of modern human populations
  - D) had thinner enamel than teeth in apes
- 73) Neandertal faces
- A) have a well developed forehead
  - B) have a well developed chin
  - C) have pronounced midfacial prognathism
  - D) all of these
- 74) Which of the following is typical of Neandertal postcranial anatomy?
- A) heights in excess of 6 feet
  - B) long limbs relative to modern humans
  - C) relatively short stature and short limbs
  - D) relatively short stature and long limbs
- 75) Investigation of Neandertal skeletons reveals abundant evidence
- A) that they were not very different from AmHs (anatomically modern *H. sapiens*) and probably contributed genes to modern European populations
  - B) of bodies adapted to the hot climate of Eastern Africa
  - C) of traumatic injuries associated with hunting large game and traversing rough terrain
  - D) that they did not have features of culture like intentional burial, sophisticated tools, or trade

- 76) Neandertal DNA
- A) appears to be quite different from that of living peoples
  - B) indicates that they are ancestral to AmHs (Anatomically modern *Homo sapiens*) in Europe
  - C) is too degraded to sequence, although this has been attempted twice
  - D) none of these
- 77) Neandertal bodies are typical of \_\_\_\_\_ human populations.
- A) cold-adapted
  - B) high altitude-adapted
  - C) arid-adapted
  - D) heat-adapted
- 78) Compared to those of other members of the genus *Homo*, the anatomically modern *H. sapiens* skull
- A) is taller and less robust
  - B) lacks an occipital bun
  - C) has a true forehead and a chin
  - D) all of these
- 79) The earliest fossil evidence for AmHs in Africa comes from the country of \_\_\_\_\_ at a date of \_\_\_\_\_ years ago.
- A) Spain; 800,000
  - B) Kenya; 1,800,000
  - C) Ethiopia; 160-180,000
  - D) Tchad; 7-8 million
- 80) \_\_\_\_\_ is the only place outside Africa to have yielded reliable evidence of modern humans earlier than 90,000 years ago.
- A) Europe
  - B) Australia
  - C) The Near East
  - D) North America
- 81) The Cro-Magnon fossil humans were found in \_\_\_\_\_ and date to approximately \_\_\_\_\_ years ago.
- A) France/150,000
  - B) France/30,000
  - C) Romania/65,000
  - D) Romania/36,000
- 82) Which of the following is part of the phenomenon known as the "Human

Revolution"?

- A) Humans killed all other hominins in the Old World and became the single dominant species by 18,000 years ago (would have been an earlier date except for that darn Hobbit).
- B) Humans lived side by side with other species in the genus *Homo* (like Neandertals and the Hobbit) for thousands of years (until 28,500 for Neandertals and 17,000 for Hobbits). Humans traded and mating with them and these species tried to emulate more successful populations of AmHs but they could not do so and eventually they died out.
- C) Human technology, diet (subsistence practices), settlement patterns, and cognitive processes (such as creativity and culture) became increasingly more complex and varied after 50,000 years ago.
- D) Humans (AmHs) were the first species to plan and think creatively about tools and technology, hunt for their food, travel and migrate across long distances, occupy caves and rockshelters, have ritual activities like burial, and to have verbal communication.

83) Upper Paleolithic technology

- A) developed in Asia first and then spread to the rest of the Old World
- B) is first seen in Europe approximately 150,000 years ago
- C) developed in association with advances in modern human morphology
- D) was associated with the use of new raw materials

84) The following statements is true about "Race":

- A) human races were established after 1.8 million years ago when *H. erectus* left Africa and settled in different areas of the Old World, to eventually evolve into Anatomically modern *Homo sapiens*.
- B) while all of the people alive today are technically *H. sapiens*, there is more genetic variation between human populations than there is within those populations and this indicates that race is analogous to sub-species level taxonomic differences.
- C) language, ethnic identity, and morphological characteristics co-vary with one another and can be used as a package of features that easily identify an individual's group membership, geographical origin of their lineage, and the history of that community's migrations through time.
- D) race is a socio-cultural reality that has important implications for identity formation, political-economy, power structures, and social institutions but it is not a genetic or otherwise biological reality.

85) Which of the following is true about *race* and *ethnicity*?

- A) the Human Genome Project has demonstrated a significant relationship between race and ethnicity.
- B) races and ethnic groups are both anthropological ways of understanding humans based on their geographic origin. Race is the biological anthropology concept and ethnic group is the cultural anthropology concept for the same thing.
- C) the concept of race incorporates and conflates sociocultural factors, like language and cultural traditions, along with morphological variation.

D) all of the above

86) Today biological anthropologists understand human variation

A) in terms of sets of traits that co-vary between ethnic groups based on their geographic origin

B) as a way of separating human communities into discrete groups that have not inter-bred much throughout history (before the Age of Discovery)

C) as an extension of the classification system developed by Linneaus, in which races are equivalent to subspecies

D) using the frequency of a single trait in a population, through time and across geographic space. Traits cannot be combined in any meaningful way.

87) Which of the following best defines *cline*?

A) the distribution of a trait or allele across geographical space

B) a folk taxonomic category based on biological observations

C) the existence of two or more distinct phenotypes within a population

D) a group of local populations