

## Chapter 2 Human Origins

### MULTIPLE CHOICE

1) The human species most probably originated five to seven million years ago in:

- A) Europe.
- B) Africa.
- C) Asia.
- D) South America.

Answer: B

Ref: 27

Diff: 1

2) Gregor Mendel discovered inheritance factors now called genes. Genes determine:

- A) heredity but only in plants.
- B) changes in earth movements.
- C) the characteristics of future generations.
- D) only beneficial physical traits.

Answer:

C Ref:

28

Diff: 1

3) The process of random genetic changes that create new characteristics is called:

- A) natural selection.
- B) mutation.
- C) competition.
- D) migration.

Answer: B

Ref: 28

Diff: 1

4) In 1953, James Watson and Francis Crick unraveled the double helix structure of:

- A) FDA.
- B) the atom.
- C) DNA.
- D) hormones.

Answer: C

Ref: 30

Diff: 1

5) The basic chemical building block of genes is:

- A) DNA.
- B) RNA.
- C) amino acids.
- D) a cell.

Answer: A

Ref: 30

Diff: 1

6) The purpose of the genome project is to:

- A) develop a perfect human.
- B) control human behavior.
- C) limit human population size.
- D) map or identify all the human genes.

Answer: D

Ref: 31

Diff: 2

7) Genetic engineering, including cloning technology, presents society with:

- A) easy solutions for medical problems without ethical questions.
- B) no choices, only solutions.
- C) clear benefits with no moral complications.
- D) extraordinarily difficult moral and political questions.

Answer: D

Ref: 31

Diff: 2

8) Researchers have found that humans had only about this many genes.

- A) 25,000
- B) 50,000
- C) one million
- D) too many to count

Answer: A

Ref: 31

Diff: 2

9) The divisions of the species that we currently use were created by:

- A) Aristotle.
- B) Stephen Jay Gould.
- C) Carolus Linnaeus.
- D) the Genome Project.

Answer: C

Ref: 31

Diff: 2

10) Niles Eldredge and Stephen Jay Gould argue that evolution is characterized by long periods of relative stability that are:

- A) the essence of gradual evolution.
- B) punctuated by sudden changes.
- C) only changed very slowly.
- D) exactly like Darwin propose.

Answer: B

Ref: 32

Diff: 2

11) Whether evolution is punctuated or continuous is:

- A) no longer a question.
- B) still much in debate.
- C) now replaced by a rapid pace theory.
- D) unimportant.

Answer:

B

Ref: 32-

33

Diff: 3

12) The broad category of individuals that can mate with each other to produce fertile offspring is called:

- A) a fossil.
- B) a community.
- C) a species.
- D) a band.

Answer:

C

Ref: 36

Diff: 1

13) David Reich's research suggests that the 1.2 percent difference in the genetic structure of humans and chimps is due to:

- A) humans and chimps living in identical environments.
- B) humans and chimps interbreeding.
- C) humans and chimps coincidentally sharing a common genetic makeup.
- D) humans and chimps having similar diets.

Answer:

B

Ref: 37

Diff: 2

14) The most important physical difference between humans and apes is in the larger size and complexity of the human:

A)

knee.

B)

jaw.

C)

brain.

D) ear.

Answer:

C

Ref: 37

Diff: 1

15) Bryan Sykes, an Oxford geneticist, argues that he has found the "seven daughters of Eve," and that:

A) all existing humans descended from them.

B) these women lived 500,000 years ago.

C) these women lived 1.4 million years ago.

D) Neanderthals descended from them.

Answer: A

Ref: 38

Diff: 2

16) Early hominid tool making is a key element in determining to start human history about:

A) 2.5 million years ago.

B) 10 million years ago.

C) 7 million years ago.

D) 3.6 million years ago.

Answer: A

Ref: 38

Diff: 2

17) Homo erectus was first discovered in 1891 in Java by:

A) Richard Leakey.

B) Eugene Dubois.

C) Raymond Dart.

D) Davidson Black.

Answer: B

Ref: 39

Diff: 2

18) A 2003 fossil find of a modern human in Ethiopia fits recent genetic studies and supports the:

A) multiregional continuity theory of human evolution.

- B) gene flow exchange theory.
- C) "Out of Africa" replacement theory.
- D) "Out of Eurasia" migration theory.

Answer: C

Ref: 40

Diff: 2

19) In 1997 two Spanish paleontologists announced that their study of 8,000,000-year-old fossils in Spain led them to believe that:

- A) humans evolved first in Spain.
- B) Homo erectus migrated into Spain from Asia.
- C) Homo habilis evolved in Europe.
- D) Homo antecessor is a separate species and possible Neanderthal ancestor.

Answer: D

Ref: 39

Diff: 3

20) Recent DNA tests have indicated that Neanderthals were most likely genetically:

- A) not an ancestor to humans.
- B) identical with modern humans.
- C) not capable of speech in any form.
- D) a smaller less robust species than modern humans.

Answer: A

Ref: 39

Diff: 2

21) There is evidence that Neanderthals did all of the following except:

- A) control fire.
- B) build shelters.
- C) make written records.
- D) make stone tools.

Answer: C

Ref: 40

Diff: 2

22) The Cro-Magnons, like the Neanderthals were:

- A) lacking in any shelters.
- B) irrigation farmers.
- C) cattle domesticators.
- D) able to make stone tools.

Answer: D

Ref: 42

Diff: 3

23) Some scientists argue that language is not limited to humans and that linguistic ability is also possessed other species such as:

- A) baboons.
- B) bear.
- C) all monkeys.
- D) chimpanzees.

Answer: D

Ref: 41

Diff: 3

24) Which of the following is NOT discussed a reason human beings are unique?

- A) Only humans can think and reason.
- B) Only humans can communicate with others by means of language.
- C) Only humans have a genome completely unique from all other species.
- D) Only humans use tools.

Answer:

C

Ref: 41

Diff: 2

25) Cave art is primarily associated with:

- A) Neanderthals.
- B) Homo erectus.
- C) Australopithecus.
- D) Modern people

Answer: D

Ref: 42

Diff: 2

### **TRUE/FALSE**

26) To a great extent, the ability of people to live happy and satisfying lives depends on the nature of the society they live in.

Answer:

TRUE

Ref: 26

Diff: 1

27) The conventional view is that the human species originated in Africa 3-5 million years ago.

Answer: FALSE

Ref: 27

Diff: 2

28) Evolution in its broadest sense refers to any process of stable equilibrium.

Answer: FALSE

Ref: 27

Diff: 2

29) Charles Darwin was influenced by his voyage on the Beagle to formulate his natural selection mechanism of evolution.

Answer:

TRUE

Ref: 27

Diff: 2

30) Genetics explains the way we are and why and how we change.

Answer: FALSE

Ref: 28

Diff: 2

31) Natural selection does not completely account for all evolutionary changes.

Answer: TRUE

Ref: 30

Diff: 2

32) Virtually no one in our modern society interprets the Bible literally anymore as it relates to the origins of man.

Answer:

FALSE

Ref: 34

Diff: 2

33) Intelligent design is different from scientific creationism in that it does not challenge evolutionary evidence.

Answer:

TRUE

Ref: 31

Diff: 2

34) Science has no explanation for existence; evolution is a theory of change, not a theory of existence.

Answer: TRUE

Ref: 31

Diff: 2

35) Tool use may have led to more protein and fat in the early hominid diet and enlarged brains.

Answer: TRUE

Ref: 29

Diff: 2

36) In human genome research it was discovered that human genes are specific to homo sapiens and are not shared by any other species.

Answer:

FALSE

Ref: 31

Diff: 2

37) Gene splicing was not important in genetic engineering developments.

Answer: FALSE

Ref: 31

Diff: 2

38) Linnaeus's divisions were determined primarily by physical traits.

Answer: TRUE

Ref: 31

Diff: 2

39) Edward Wilson helped advance the thesis of sociobiology with his work on fear of strangers.

Answer: TRUE

Ref: 32

Diff: 2

40) Our future social evolution will likely be substantially influenced by the information we have about our human evolution.

Answer:

TRUE

Ref: 31

Diff: 2

41) There is complete agreement among social scientists that there is no contradiction between the idea of free will and the genetic basis for the human behavior idea of sociobiology.

Answer:

FALSE

Ref: 31

Diff: 3

42) Darwin saw evolution as a rapid process with sudden abrupt changes.

Answer: FALSE

Ref: 32

Diff: 2

43) Gould's punctuated equilibrium theory holds that evolution is a stop/go process of sudden change with long periods of no change.

Answer:

TRUE

Ref: 32

Diff: 2

44) The discovery of new fossils of birds challenged Gould's theory of punctuated equilibrium.

Answer: FALSE

Ref: 33

Diff: 2

45) David Reich suggests that chimps and humanoids interbred for hundreds of thousands of years. This accounts for their genetic structure being almost identical.

Answer:

TRUE

Ref: 37

Diff: 2

46) Gorillas, like humans, live on the ground. Chimpanzees spend much of the daytime on the ground. One reason for this descent was their increase in size.

Answer:

TRUE

Ref: 37

Diff: 2

47) The earliest known species of Homo (human) is Homo habilis.

Answer: TRUE

Ref: 38

Diff: 2

48) Average brain size of Homo erectus was smaller than people they had replaced.

Answer: FALSE

Ref: 39

Diff: 3

49) It is suspected that Neanderthals are the ancestors of modern humans.

Answer: FALSE

Ref: 40

Diff: 3

50) Noam Chomsky argues that gorilla language studies invalidate the theory that humans are unique.

Answer: FALSE

Ref: 41

Diff: 2

## SHORT ANSWER ESSAYS

51) What is Darwin's theory of evolution and how does it apply to human evolution? What is natural selection?

Ref: 27-28

Suggested Answer: Darwin's theory of evolution outlines a process of progressive change. In its broadest sense, evolution means that today's life forms are the descendants of earlier ones. This idea applies to human evolution because Darwin noticed that there were remarkable similarities between humans and other animal species and he wrote about the evolution of humans. Natural selection is a part of evolution and is the idea that individuals in a species have characteristics that make them more likely to survive and pass those traits on to future generations. This idea is often called the "survival of the fittest."

52) What is genetic engineering and what has research using genetic engineering done? What ethical and social issues does genetic engineering present?

Ref: 30-31

Suggested Answer: Genetic engineering is the term given to rearranging genetic material to create new, man-made life forms or to change existing life forms. Scientists have genetically altered mice, made a more productive type of rice, and cloned sheep. Research has also found that cloning has challenges and often gives the clone incorrect growth instructions. The fact that cloning has not been perfected causes many scientists to argue that we should not clone humans. Other ethical issues involved in cloning are stem cell research and the rights of potential clones.

53) What is sociobiology and how is it applied to human behavior? What problems do some social scientists find in sociobiology?

Ref: 31-32

Suggested Answer: Sociobiology is a combination of sociology and biology developed to help explain the genetics behind human behavior. It is applied to the understanding of human behavior in stating that certain behavior is evolutionary. Certain actions increase the chance of survival, and these behaviors are a mix of biology and social settings. Some social scientists argue that sociobiology removes free will and makes it easy to justify or rationalize behaviors like the unjust treatment of others.

54) What is the difference between the punctuated equilibrium and gradual change theories of evolution?

Ref: 32-34

Suggested Answer: Punctuated equilibrium states that evolution is a stop and go process marked with periods of sudden change followed with long periods of no change. Gradual theories of evolution are different in that they see evolution as a gradual and steady process. Graphed, gradual theories would look like a straight line, while punctuated equilibrium looks like a staircase.

55) Is the human species unique? Discuss the current issues concerning ape thinking, language and tool use. What difference does it make whether humans are unique?

Ref: 41

Suggested Answer: There are still debates over whether or not the human species is unique. Three areas of debate are that humans have thinking and reason, humans are the only animals to communicate through language, and that only humans use tools. Those who argue that humans are unique point to syntax, an important aspect of language, as the key difference that makes humans unique. However, there is evidence that disagrees with this. For example, some argue that certain animals have solved complex problems, have learned sign language, expressed emotion, and used both

tools and shelter. This is an important question because it raises ethical issues towards the treatment of animals and of those in society who are ill or have brain damage.

