

**Anthropology 105: Human Variation  
Midterm Exam, Winter 2006**

**You must bubble in your name and seven-digit Perm number on your Scantron sheet in order for your exam to be graded.**

---

MULTIPLE CHOICE (1 point each, 50 points total). Select the ONE best answer for each question. Record your answer in the appropriate bubble on the Scantron form.

1. Science is:

1. A process of guess work and luck
2. A process of conjecture and refutation
3. Something we must blindly accept
4. Always true and correct
5. Affected by the cultural upbringing of the scientist
6. Pure and not affected by external influences

- a. 2 only
- b. 1 and 3
- c. **2 and 5**
- d. 2 and 6
- e. 4 and 6

2. In 1699 Edward Tyson published the results of his dissection of a chimpanzee. What was his crucial finding?

- a. The chimpanzee was a monkey that had had its tail removed
- b. **Chimpanzees more closely resemble humans than monkeys**
- c. The chimpanzee was actually a pygmy human
- d. The chimpanzee was actually a deformed human child
- e. Chimpanzees more closely resemble monkeys than humans

3. The following principles are attached to which theory?

1. Every species that could exist does exist
  2. Every existing species can be organized along a single dimension, a line
  3. Every species on this line can be arranged hierarchically in terms of its relative perfection
- a. The theory of natural selection
  - b. **The Great Chain of Being**
  - c. The theory of Linnaeus
  - d. Classical systematics
  - e. Cladistics

4. Which sentence is true?

- a. Darwin supported the idea of the Great Chain of Being
- b. Darwin and Linnaeus graduated in the same year from Cambridge University
- c. Darwin divorced the idea of evolution from the idea of progress**
- d. The Count de Buffon was a strong supporter of Linnaeus' theory of a nested hierarchy of life
- e. Lamarck was a strong supporter of Linnaeus' theory of a nested hierarchy of life

5. Cultural relativism is the analysis of:

- a. Cultures by comparing them to ones own culture and judging them accordingly
- b. Ones own culture by considering it as the standard against which other belief systems are judged
- c. Cultures by direct comparison with a designated out-group culture
- d. Cultures based on the idea that cultural evolution is directional and differences between cultures are signs of relative progress
- e. Cultures without judging them except in the context of their own history, ecology and belief system**

6. Modern views regarding biological and cultural evolution suggest:

- a. That there is no connection between biological and cultural evolution and, in fact, it is racist to believe so
- b. That both biological and cultural evolution are without predetermined direction or forethought**
- c. That although biological evolution is non-directional, cultural evolution is uni-directional
- d. That progress is the guiding force behind both biological and cultural evolution
- e. That cultural evolution is non-directional, but biological evolution is linear and directional.

7. The idea that not all individuals of a species survive and reproduce with equal efficiency is associated with:

- a. Darwin**
- b. Lamarck
- c. Buffon
- d. Nelson
- e. Linnaeus

8. When a new allele is introduced into a population, what is the ultimate source of this new allele?

- a. Bad luck
- b. Mutation**
- c. An outsider
- d. Human intervention
- e. Pangenesis

9. In artificial selection human intervention results in changes in an animal breed. In natural selection what in general terms is the analogous *intervening power*?

- a. Humans
- b. Luck
- c. **Nature**
- d. Fate
- e. Chance

10. Natural selection *selects* amongst phenotypes, but its evolutionary importance is how it affects

---

- a. **Genotypes**
- b. Sperm dispersal
- c. Survival rates
- d. Female sexual drive
- e. Darwin's finches

11. Human evolution can be said to be characterized by?

- a. A reduction in biological diversity
- b. Solely biological evolution
- c. An increase in cultural diversity
- d. Solely cultural evolution
- e. **a and c**

12. Experiments at boys summer camps that divided the boys into two groups and gave them competitive tasks to complete, suggest that?

- a. Humans are very susceptible to forming groups
- b. Humans will quickly invent mythologies about *others*
- c. Humans have evolved to live in groups
- d. **All of the above**
- e. None of the above

13. The main difference between the 18<sup>th</sup> century works of Linnaeus and the Count de Buffon, regarding nature, can be said to be that

- a. **Linnaeus was mainly interested in classifying it and Buffon in describing and explaining it**
- b. Linnaeus was a strong supporter of Darwin's work while Buffon constantly refuted it.
- c. Buffon only classified humans into 4 subspecies, white, yellow, red and black.
- d. Linnaeus refused to classify humans into subspecies
- e. Buffon was French and wrote in inpenetrable prose.

14. The major contribution of the Boas school of anthropological thought was

- a. To conceptually unite biological history and cultural history
- b. To conceptually divorce biological history from cultural history**
- c. To reaffirm the significance of the idea of the Great Chain of Being
- d. To prove that biology causes specific cultural forms, thus higher cultures are better races.
- e. To provide theories that justified the exploitation and suppression of others

15. The main flaw with eugenics was that it?

- a. Suggested that social problems could never be solved
- b. Was founded by the Nazis party
- c. Was never a widely accepted view
- d. Was only supported in Europe
- e. Suggested that social problems were a result of biology rather than culture**

16. Which of the following sentences is true?

- a. Humans develop in environments of their own construction
- b. Humans have many cultural buffers that insulate them from their environment
- c. Humans are a product of both nature and nurture
- d. Humans inherit their genes and their environment from their parents
- e. All of the above**

17. The film “Bad Blood” suggested which of the following sentences is true?

- a. 2/3 of all deaths are related to genetics
- b. Most children die due to genetic *problems*
- c. When genes are copied mistakes and/or mutations can occur
- d. Most mutations occur in sperm
- e. All of the above**

18. In lecture the theory of genetic load was mentioned. Which of the following best describes it?

- a. Some alleles are physically heavier than others because of mutated base sequences. These heavier alleles weigh down chromosomes making meiosis harder.
- b. Due to our culture we keep genetic *weaklings* alive and allow them to breed, thus allowing “*bad genes*” to spread through the human race.**
- c. It is the idea that some alleles, by chance, can spread faster through a population than other alleles
- d. It is the idea that some humans carry more alleles than others making them heavier individuals and genetically more important.
- e. Some cultures prefer heavier women. It is the idea that there are genes for being *fat*, which are favored in some cultures.

19. The fact that zebra fish and humans have a stretch of DNA with a very similar sequence suggests that?

1. Humans and zebra fish shared a common ancestor with same stretch of DNA
2. Mutations are not random.
3. Convergent evolution between Zebra fish and humans recently occurred
4. Zebra fish were once human-like but have degraded to their current form

- a. 3 only
- b. 1 and 4
- c. 2 only
- d. **1 only**
- e. 2 and 3

20. Bishop Usher, Isaac Newton, and Charles Lyell all speculated about:

- a. The effect of gravity
- b. Sexual Selection
- c. Natural Selection
- d. **The age of the Earth**
- e. Anthropomorphism

21. Symbolism is?

- a. **A cultural adaptation**
- b. Unique to Westerners
- c. Unique to Traditional Communities
- d. A type of religion
- e. Purely logical

22. An interesting fact about cultural symbols and their meaning is that?

- a. **They are dependent on the individual and their culture. So different cultures can have different meanings for the same symbol.**
- b. Regardless of the culture the same symbol will mean the same thing in any culture. Suggesting common ancestry of all humans.
- c. No two cultures have the same symbol. All symbols are unique in appearance and meaning to a specific culture.
- d. All symbols ultimately have the same meaning and exist solely to help us communicate across cultures.
- e. The meaning of all symbols are unique to the person not the culture. So, symbols do not help unite people into groups.

23. Which of the following can be said to be true regarding artificial selection?

1. Domestic animals have been genetically changed through artificial selection
2. It involves encouraging the reproduction of individuals with desired traits
3. It involves discouraging the reproduction of individuals with undesired traits

4. Humans are usually the source of selective pressure
  5. It does not affect the genotype only the phenotype
- a. 1 only
  - b. 1 and 3
  - c. **1, 2, 3 and 4**
  - d. 3, 4 and 5
  - e. All of the above

24. Which of the following can be said about symbols?

1. Their meaning is arbitrary
  2. They facilitate cooperation
  3. They facilitate competition
  4. They are key to our cultural adaptation
  5. We use them to construct our reality
  6. Their meaning is dependent on the group using them
- a. 1 only
  - b. 2 and 3
  - c. 4 only
  - d. **All of the above**
  - e. 6 only

25. A sequence of DNA that codes for a specific output is commonly known as a?

- a. Chromosome
- b. Mutation
- c. **Gene**
- d. Particle
- e. Atom

26. Which of the following could be said to be a main effect of Christianity on people's views of their place in nature?

- a. Good Christians should not exploit other, weaker, less God-like species
- b. **There is no evolutionary continuity between humans and other species**
- c. All species were created equal
- d. All species were not created at once
- e. Humans gain power through association with their animal ancestor

27. Sexual dimorphism

- a. Can only result from sexual selection
- b. Is a congenital disease caused by a point mutation
- c. Is a condition found only in lower insects
- d. **Refers to morphological differences between males and females**

- e. Is never correlated with mating patterns

28. The philosophy of Pythagorus emphasized the idea of understanding the world through:

- a. **Mathematics**
- b. Art
- c. Psychology
- d. Evolution
- e. A primitive form of transcendental meditation

29. Which of the following discoveries resulted in people questioning their World view and God's divine plan?

- a. The discovery of microscopic organisms
- b. Explorers discovering novel lands and new people
- c. Explorers discovering novel animals
- d. **All of the above**
- e. None of the above

30. Non-Europeans were once believed by Europeans to be due to a separate creation and thus lesser beings. Which of the following confounded this theory?

- a. *Natives* could be taught to speak English
- b. Europeans could learn the *natives'* language
- c. **Explorers could interbreed with *natives***
- d. The friendliness of the *natives*
- e. Similarities in jewelry design

31. Lamarck proposed that:

- a. **Adaptation occurred through the inheritance of acquired traits**
- b. The Earth is static and unchanging
- c. The Earth was only 4000 years old
- d. All traits were a gift from God
- e. Organisms remain unchanged throughout their lifetimes

32. Thomas Malthus proposed famines, plagues and wars as \_\_\_\_\_ checks, and moral constraints as \_\_\_\_\_ checks on population growth.

- a. **Positive, Preventative**
- b. Preventative, Positive
- c. Preventative, Plausible
- d. Plausible, Positive
- e. Positive, Positive

33. Which of the following were suggested by Darwin regarding biological variation?

1. Variation exists between individuals of a species
  2. Variation is due to different alleles in chromosomes
  3. Individuals with favorable heritable variations are more likely to survive
  4. Variation is heritable
  5. Variation is inherited through particulate inheritance rather than blending
- a. 1, 2 and 3
  - b. 1, 3 and 4**
  - c. 1, 2 and 5
  - d. 2, 4 and 5
  - e. All of the above

34. How does Pangenesis suggest adaptive variations are inherited?

- a. Blending of particles (gemmules) specific to different parts of the body**
- b. Particulate inheritance
- c. Blending of alleles
- d. Blending of chromosomes
- e. Blending of DNA

35. In the 19<sup>th</sup> century Gregor Mendell experimented with \_\_\_\_\_ and discovered \_\_\_\_\_.

- a. Red and white flowers, particulate inheritance
- b. Pea plants, particulate inheritance**
- c. Pea plants, pangenesis
- d. Red and white flowers, pangenesis
- e. None of the above

36. The fact that in Mendell's F<sub>2</sub> generation a 3:1 ratio of smooth to wrinkled pea coat occurred indicates that

- a. Particulate inheritance does not exist
- b. Mutations occur more often than expected at some alleles
- c. Blending occurs and pangenesis is correct
- d. The theory of natural selection is easily falsified
- e. The integrity of genetic information is maintained generation after generation**

37. A difference between mitosis and meiosis is:

- a. Only meiosis involves the replication of chromosomes
- b. Mitosis produces gametes
- c. Mutations only occur during mitosis

**d. Meiosis produces haploid cells**

- e. Only meiosis produces daughter cells

38. Traits inherited as if recessive in females and dominant in males could be said to be \_\_\_\_\_, of which hemophilia and red/green color blindness are examples?

**a. Sex-linked**

- b. Co-dominant  
c. Homozygous dominant  
d. Heterozygous  
e. Dominant

39. Male pattern baldness is usually only exhibited when a Y chromosome is present. However, post-menopausal women may also show it. Why?

- a. It is dependent on age of the individual  
b. The trait is affected by diet  
c. It is a recessive sex-linked trait  
**d. The trait is affected by testosterone levels**  
e. The trait is affected by blood type

40. Where did Mitochondrial DNA originate from?

- a. DNA that escaped from the nuclei of the first nuclear DNA organisms  
**b. Bacteria or viruses that invaded the first nuclear DNA organisms**  
c. Added due to radiation poisoning during the last ice age  
d. Created by God  
e. Interbreeding between different races

41. Large scale errors in the duplication of genetic material at the chromosomal level are called \_\_\_\_\_. Errors in the duplication of DNA at the molecular level that involve a change in one or more base pairs are called \_\_\_\_\_.

**a. Chromosome aberrations, point mutations**

- b. Point mutations, chromosome aberrations  
c. Chromosome mutagens, exact mutagens  
d. Exact mutagens, chromosome mutagens  
e. Chromosome errors, base errors

42. Which of the following sentences is FALSE?

1. Dominant alleles are always expressed in some way in the phenotype
2. Recessive alleles in homozygous pairs are expressed in the phenotype
3. Dominant alleles can only affect the phenotype when in a homozygous pair

4. Two recessive alleles (a homozygous pair) are always lethal
5. Being homozygous dominant is always better than being heterozygous

- a. 1 and 2
- b. 1, 2 and 3
- c. 5 only
- d. 3 and 4
- e. **3, 4 and 5**

43. \_\_\_\_\_ are important because they create \_\_\_\_\_, which can be acted upon by \_\_\_\_\_. This allows organisms to \_\_\_\_\_ new ways of handling their ever changing environments.

- a. **mutations, variation, natural selection, evolve**
- b. variations, opportunities, pangenesis, rationalize
- c. mutations, opportunities, variations, stabilize
- d. genes, natural selection, humans, utilize
- e. genes, ideas, pangenesis, evolve

44. Today from where is Mitochondrial DNA inherited?

- a. The paternal line
- b. Both the maternal and paternal lines
- c. It is not inherited. It is DNA that is *created* as we age
- d. It is *created* during fertilization
- e. **The maternal line**

45. Which of the following can cause genetic mutations?

1. Carcinogenic chemicals
  2. U.V. radiation
  3. Radon
  4. Mustard gas
- a. 1 only
  - b. 2 and 3
  - c. 4 only
  - d. 1, 3 and 4
  - e. **All of the above**

46. You overhear a conversation about a newly discovered primate species in which it is stated that the primate's mating system is polygynous. What assumptions about the species could you make with this limited knowledge?

- a. The species is found in South America
- b. **The males of the species are probably larger than the females**
- c. The males and females of the species are probably the same size
- d. The females of the species are larger than the males
- e. The species is found in Southern Africa

47. Which of the following sentences, regarding sexual dimorphism in primates, is TRUE?

- a. Gibbons are among the most sexually dimorphic of all primates
- b. Human males and females show no sexual dimorphism, except in the pelvic region
- c. Baboon males and females show no sexual dimorphism, except in canine size
- d. **Most sexual dimorphic traits are overlapping, but the means of the 2 sexes are different**
- e. No primate species truly shows sexual dimorphism, it is a trait mainly exhibited by birds

48. Sexual selection was described by Darwin as?

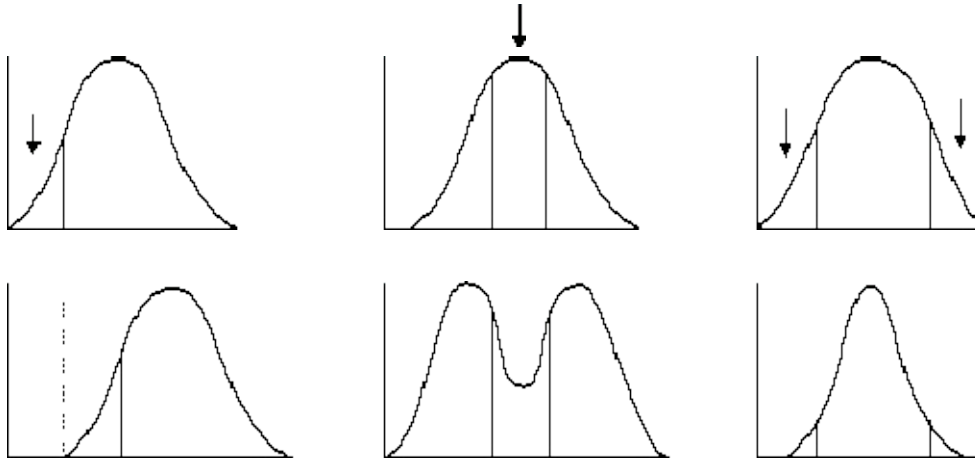
- a. The struggle between individuals of opposite sexes for the same resource
- b. Completely separate from natural selection
- c. Occurring with equal pressure throughout a creature's lifetime
- d. How an animal decides if it wants to be male or female
- e. **The struggle between individuals of one sex for possession of the other sex**

49. The following are examples of how genetic variation can be reduced. Graph A is an example of \_\_\_\_\_, Graph B is an example of \_\_\_\_\_ and Graph C is an example of \_\_\_\_\_.

A

B

C



1. Directional Selection
2. Dysfunctional Selection
3. Disruptive Selection
4. Destabilizing Selection
5. Stabilizing Selection
6. Random Selection

- a. **1, 5, and 3**
- b. 1, 2 and 5
- c. 4, 5 and 6
- d. 3, 4 and 6
- e. 2, 3 and 5

50. White collared peccary (a large wild pig) live in the jungles of South America. Unusually their ancestors lived in open grassland savannah. The peccary's ancestors' mean height was 1 meter. In the jungles of South America low lying tree branches hinder the movement of creatures above 0.8 meters in height. Modern white collared peccaries have a mean height of 0.75 meters. The white collared peccary is an example of which type of selection?

- a. Dysfunctional Selection
- b. Random Selection
- c. **Directional Selection**
- d. Disruptive Selection
- e. Stabilizing Selection