

Anthropology 1: Introduction to Physical Anthropology University of California, Berkeley

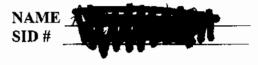
L. Hager Spring 2001

EXAM 1: 100 POINTS

Instructions:

- 1. Write your name, section day/time, GSI on the front side of the Scantron form. Only use a number #2 pencil!
- 2. Write your name and student ID number at top of pages 8-13 of the exam.
- 3. There will be no talking once the first exam is handed out.
- 4. If you have a question, raise your hand and someone will come to help you. Respect your fellow students in this process.
- 5. If you are suspected of cheating, you will be given a warning, or asked to move, or asked to leave the exam and surrender your exam. You may receive zero points on the exam.
- 6. Questions 1-40: put your answers on the Scantron f using a #2 pencil.
- 7. Questions 41-50, answer the questions directly $\phi a = -\frac{340}{2}$ in the space provided. These questions can only be answered in ink.

Page 2-7	Score 36	
8	17	
9	10	
10	3.5	
11	(0)	(85.75)
12	3.5	
13	5.75	
	è	
	•	



PART 2

Use only the space provided to answer the questions. Answers on the back of the page will <u>not</u> be read.

41) Define and clearly outline the differences and similarities between the following pairs of concepts. (4 points each question)

A) Principle of Segregation / Principle of Independent Assortment

Both workship iden hed by Mendel. Princ of Segr. Says

that remologicus pairs of chromosomes segregate during

melosis. Princ of the Assort says this occurs independently

of other chromosomes (so segregation of allots for one terremostrier)

B) Lamarkian Evolution / Darwinian Evolution

love Both concepts recognize the dynamic, retationship

between an individual and its environment lamarkian

between an individual and its environment lamarkian

sen says that sometic traits acquired during an individuals

eu. says that sometic degrif a gradle she leves its near during

life home can be inherited (egrif a gradle she leves its near during

life home can be inherited (egrif a gradle she leves its near during

life home can be of segregated to the says natural

c) Hypothesis / Theory (selection posses on forceable treats to next genochors

by pothosis is a guess, a possible explanation of an obscribed

pheromeron. Theory is a hypothesis that has not been

proved balse (null ny pothesis has been proved false).

D) Gene Flow/Genetic Drift
Both can contribute to encluden. Gene that is defined as

separated as exchange of genetic material between

populations. Genetic drift is that a charge in the gene pool

due to condemn events (flood, exist nouche, fer excurriple

due to result in exceptable. isolation). What Author The

can'd provide in calls. DNA is double-shoulded, contains

on individual's genetic waterial. Compased of Adenine,

Chanine, Thymine, and Cytosine RNA aids in pretern

synthosis and thomas in transcription and trans in the for



45) You are using the MN blood types as a basis for a disputed paternity case. In this system, the alleles M and N are codominant. In addition, in order to ensure results you also look at secretor locus for which the secretion (Q) of substances into the body fluids other than the blood is dominant to non-secretions (q). The mother and the child both have N blood type. The mother is homozygote dominant for the secretor and the child is heterozygote at this locus. The husband has type MN blood and is homozygous recessive for the secretor whereas the alleged father has type N blood and is homozygous dominant for the secretor.

What would you advise the court about the possible paternity of the child? You MUST show your work in the Punnett squares for full credit. Label your axes. (5 points)

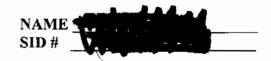
The husband could be the futher.

"NN Qq" is a possibility

The alleged father is not the father.

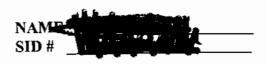
NN Qq is not a possibility.

Congrate Tre & with



46) Match each individual in column A to the appropriate concept in column B (1 point each, 8 points total)

	Column A	Column B		
	H Gregor Mendel	-A. Catastrophism		
	A George Cuvier	B. Populations increase in size exponentially		
	E Stephen J. Gould	-C-Inheritance of acquired characteristics		
		D. Structure of DNA		
8	Alfred Wallace	-E. Uniformitarianism		
	E Charles Lyell	-F-Punctuated equilibrium		
	D Francis Crick	-G. Evolution by natural selection		
	(b) Thomas Maithus	H. Principle of segregation		
	47) Match the following conditions in Column A in Column B. (4 points)	with the appropriate concept or cause		
	Column A	Column B		
	Sickle Cell Anemia	A. Autosomal Dominant trait		
	Hemophilia	-B. Nondisjunction		
	BDown syndrome	-C. Heterozygote advantage		
	Achondroplasia dwarfism	- D. X-linked trait		



48) Tay-Sachs disease is caused by a recessive allele. Individuals who are homzygous for this recessive allele die of Tay-Sachs before the age of four. Two theories are presented in the Park reader to explain the high incidence of Tay-Sachs in the Ashkenazi Jew population. In the space provided, briefly outline the theory presented by each author. (4 points)

Diamend feels that selection historically Tay-sachs
heteropygetes week could have been more resistant to +2
heteropygetes week could have been more resistant to +2
heteropygetes were final was rampoint in the
huberculosis, a disease mat was rampoint in the
huberculosis, a disease mat was rampoint in the
huberculosis and disease that was himself is been in him to the
himself selection for selection in hoters which is him to He feels selection fenered the heterotygote, which is which the alle has survived and such a large frequency.

Glausiusz says that there hasn't been enough time Gove he drift and the Runder's effect, due to an answall writering that any size explains that any matural writering the surgest of the proposition of the surgest of the explains that any size explains that any invalidation of the surgest of the populations susceptibility to tary-sachs.

DO NOT WRITE BELOW THIS LINE!



49) Using a scientific perspective, as outlined by Stephen J. Gould in your Park reader, discuss why "creation science" is not a scientific explanation. What would be necessary for it to be a scientific explanation? (4 points)

Creation Science is faith-based this not Eilsifiable, and is based on no observable evidence. Observable data in fewer of creatherism.
Is no cessary, says Gould, to qualify
creation science as an actual scientific
explanation.

- 1 not testable

50) Fill in the following chart. (5 points)

	Replication	Transcription	Translation	Meiosis	Mitosis
Where does it take place?	cells	cerl	cutorde	gameter	scheine
		nucleus	bacleus,	3	cells
What is the end product?	Louble		repland	4 happid gametes	2 diploid
	the amount		1000	game tes	2 diploid scmate
	of in a nounce	<u> </u>	DNA		عالف
	AUCT	,			