

THE OPEN UNIVERSITY OF SRI LANKA
B. Sc. DEGREE PROGRAMME – LEVEL 04
BOU2101 – GENETICS & EVOLUTION
CAT 1 (NO BOOK TEST) 2013/14
DATE: 26th February 2014



Time: 2.30 – 3.30 p.m.

REGISTRATION NUMBER:

Answer all questions.

This paper consists of two parts, Part A and Part B.

Part A - Q1 contains twenty (20) multiple choice questions. Tick the correct answers for these questions with a cross (x) against the question number in the answer sheet provided below.

Part B – This part has two questions; Q 2 and Q 3. Answers for these structured essay questions should be written in the space provided in the question paper itself.

Submit the entire question paper at the end of the examination.

Answer Sheet for Part A – Q 1

	a)	b)	c)	d)
1.1				
1.2				
1.3				
1.4				
1.5				
1.6				
1.7				
1.8				
1.9				
1.10				

	a)	b)	c)	d)
1.11				
1.12				
1.13				
1.14				
1.15				
1.16				
1.17				
1.18				
1.19				
1.20				

Registration number:

PART B

Q 2.

2.1. What are the five basic assumptions on which Darwin's theory of natural selection is based on?

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2.2. What are the pre-zygotic isolating mechanisms that discourage inter population breeding and the formation of a new species.

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2.3. A population of cats can be either black or white; the black allele (B) has complete dominance over the white allele (b). In a population of 1,000 cats, 840 are black and 160 are white,

- I. Find: the frequency of the dominant and recessive alleles and the frequency of individuals with dominant, heterozygous, and recessive genotypes.

II. The next generation of cats has a total population of 800 cats, 672 black and 128 white. Is the population in Hardy-Weinberg Equilibrium?

III. What are the conditions in which the gene ratio remains constant for any population?

Q3.

3.1 Give two examples of prosimians.

i.....

ii.....

3.2. Fill in the table given below to compare the New World monkey with the Old World monkey.

	New World monkey	Old World monkey
Distribution		
Teeth		
Nose		
Tail		

(3.3) Tabulate four observable differences of the skull of a human and a chimpanzee

	Chimpanzee Skull	Human Skull
1		
2		
3		
4		

(3.4) What is the species to which the fossil specimen nicknamed “Lucy” is belonged ?

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(3.5) Give two examples of fossils of *Homo erectus*

i.....

ii.....
