

MICROEVOLUTION

Use Chapter 18 in the text to answer the following questions/complete the following blanks.

Microevolution can be defined as changes in a population's _____ over _____.

SECTION 18.1

Individuals don't evolve, _____ do!

Three types of traits that a population may possess are:

- i. _____ traits (ie. cobalt blue feathers)
- ii. _____ traits (ie. how the cells operate)
- iii. _____ traits (ie. how individuals respond to stimuli)

Most variation in traits has a _____ basis. Individuals of the same population generally have the same _____ and _____ of genes. All the genes in the population can be referred to as the _____ and each gene exists in two or more slightly different molecular forms called _____.

Five factors are the source for all variation:

- i. _____ (produces new alleles)
- ii. _____ (leads to new combinations of alleles)
- iii. _____ (leads to mixes of _____ and _____ chromosomes)
- iv. _____ (unites the alleles of two parents)
- v. _____ (leads to loss, duplication or alternation of alleles)

Of the above, only _____ creates new alleles!

[In addition to the above sources of variation, the _____ can influence how genes are expressed. For example, the _____ affects the genes which govern leaf development in plants.]

SECTION 18.3

A **mutation** is a _____ that can alter _____. The phenotypic outcome may be _____, _____, _____ or _____.

Mutations are the _____ source of _____, hence of all _____ in heritable traits.

SECTION 18.4

Genetic drift is _____. It is most rapid in _____ populations. It may either _____ or _____ variation between populations. Two extreme examples of genetic drift are _____ and _____.

i) **“Founder effect”**:

_____.

State one example used in the text to illustrate this:

ii) **“Bottlenecks”** occur when

_____ nearly wipes out a larger population.

State one example used in the text to illustrate this:

SECTION 18.5

Allele frequencies change as individuals _____ a population (_____) or new individuals _____ it (_____). This physical flow of individuals is called “_____ flow” and it helps to keep neighbouring populations genetically _____, ie. it counters the differences brought about through _____, _____, and _____.

[it is only when gene flow is stopped, that changes in allele frequencies (ie. evolution) occur. But what could prevent gene flow between two populations? Chapter 19 has the answers!]

SECTION 18.6

_____ probably accounts for more changes in allele frequencies than any other microevolutionary process.

Review points 1-5 on pg. 278 and then write *point 6* here:

“For any natural population, _____
_____ is called **natural selection**.”

SECTION 18.7

“In **directional selection**, _____

_____.” (In your notes, draw Fig. 18.7, pg. 278)

SECTION 18.8

“In **stabilizing selection**, _____
_____. Over time, alleles for _____
are eliminated.” (In your notes, draw Fig. 18.9, pg. 280)

“In **disruptive selection**, _____
_____ and intermediate forms _____
_____.” (In your notes, draw Fig. 18.11, pg. 281)