Question 16

In an infinitely large population, allele frequencies should not change over time. However, the frequencies of alleles in any real, small population (where the environment is stable) will be expected to change.

This statistical expectation is called

A. natural selection.
B. mutation.
C. adaptation.
D. genetic drift.

Question 17

Occasionally, seeds of the same species of trees living in different small wooded areas are blown from one grove of trees to another. The seeds may germinate, become established in the new grove, and eventually pollinate trees of the same species in that population.

This is an example of

A. allopatric speciation.
B. gene flow.
C. genetic bottle neck.
D. the founder effect.

Question 18

In order for two populations of a sexually reproducing species to evolve into two different species,

A. there must be geographic isolation.
B. there must be gene flow between the two populations.
C. the two populations must form fertile hybrids.
D. individuals from the two populations must be unable to reproduce with each other.

Question 19

The carbon-14 content in bone is about one ^{14}C atom to every 10 billion ^{12}C atoms. The half-life of ^{14}C is about 5500 years.

Using radioisotopic dating techniques, a fossilised bone was found to have 0.125 ^{14}C atoms to every 10 billion ^{12}C atoms.

The most accurate estimate of the absolute age of the bone would be

A. 5500 years.
B. 55 000 years.
C. 16 500 years.
D. 11 000 years.

