

Question 30 (Answer: **A**)

- A new allele needs the DNA base sequence itself to change.
- Only a gene mutation does that.
- Mitosis copies DNA faithfully, and random mating or fertilisation just recombines existing alleles.

Question 32 (Answer: **B**)

- A new allele is a new version of a gene, which means the DNA base sequence has changed.
- Only mutation changes the base sequence.
- Sexual reproduction and selection *rearrange* or *filter* existing alleles – they do not create new ones.

Question 33 (Answer: **B**)

- Continuous variation gives a range of values with no distinct categories – body mass, for example.
- It is usually caused by many genes together with the environment.
- Discontinuous variation gives distinct categories, such as blood group, and is controlled by genes alone.

Question 33 (Answer: **A**)

- Meiosis shuffles the chromosomes, so it creates variation.
- Mutation creates entirely new alleles.
- Random mating and fertilisation combine alleles in new ways; mitosis and asexual reproduction produce *identical* cells, so they create none.