

(Sexual and asexual reproduction)

Q1.(2018)

	statement is true for		
	mitosis only	meiosis only	both mitosis and meiosis
all cells produced are genetically identical	✓		
in humans, at the end of cell division each cell contains 23 chromosomes		✓	
involves DNA replication			✓

Q2.a)(2018)

any **two** from:

- many offspring produced
- takes less time
- (more) energy efficient
- genetically identical offspring
- successful traits propagated / maintained / passed on (due to offspring being genetically identical)
- no transfer of gametes or seed dispersal
- not wasteful of flowers / pollen / seeds
- colonisation of local area

Q2.b)(2018)

genetic variation (in offspring)

(so) better adapted survive

(and) colonise new areas by seed dispersal

or

can escape adverse event in original area (by living in new area)

many offspring **so** higher probability some will survive

Q3.(2020)

any **three** from:

- mitosis produces two (daughter) cells but meiosis produces four (daughter) cells
- one cell division in mitosis but two cell divisions in meiosis
- mitosis produces cells with two of each chromosome, but meiosis produces cells with one of each chromosome

- mitosis produces genetically identical cells, but meiosis produced genetically different cells

Q4.(2020)

any **one** from:

- DNA doubles / copies / replicates (once)
- increase in the number of mitochondria / ribosomes / sub-cellular structures

Q5.(2022)

	Sexual reproduction	Asexual reproduction
Cell division occurs	✓	✓
Fertilisation occurs	✓	
Genes are passed on from parent to offspring	✓	✓
Offspring are genetically identical to each other		✓

allow **1** mark for 1 or 2 correct rows
ignore 'x' in blank boxes

Q6.(2022)

pollen (grain)

Q7.a)(2023)

any **one** from:

- variation of a named / described (desirable) characteristic
- not all susceptible to the same disease / pathogen
- maintain / increase gene pool

Q7.b)(2023)

any **one** from:

- they have the same named /(desirable) characteristic(s)
- they grow at the same rate
- they ready to harvest at same time

Q7.c)(2023)

(a group of) cells are grown (into a new organism)

Q7.d)(2023)

any **one** from:

different

- water
- minerals / ions

- light
- herbivores
- disease
- plant density
- soil pH

Q7.e)(2023)

male gametes = **X + Y**

female gametes = **X + X**

offspring genotypes correctly
derived from gametes

Q7.f)(2023)

any **one** from:

- half are XX and half are XY
- equal probability of X or Y
sperm fertilising an egg
- (the Punnett square shows)
50% (chance of) male /
female