Markscheme

1

Asexual Reproduction		Sexual Reproduction
	produces offspring	
involves 1 individual		involves 2 individuals
offspring genetically identical to parent		offspring genetically unique from parent
faster		slower
gametes not produced (typically)		gametes produced

2 a) asexual reproduction (females only, no males) - parthenogenesis

b) any reasonable advantage such as:
- females can reproduce without male sharks present
- females can reproduce more quickly compared to sexual reproduction

c) any reasonable advantage such as:
- offspring will show variation, ∴ more likely to have adaptive feature / population more resilient in changing environment

3 Stolons is a method of asexual reproduction, whereas strawberries is a part of sexual reproduction. Being able to utilize both methods allows more versitility and resiliency for the plant. Some situations may favour asexual, such as if conditions around plant is ideal so forming clones would be successful or if pollinators / other plants are scarce. Some situations may favour sexual, allowing for more diversity and spreading of offspring away from parent

4 Many possible examples. Honeybees are responsible for <u>many</u> crops including:
Kiwi, potato, onion, cashews, celery, strawberries, coffee, broccoli, beets, blueberry, watermelon, cucumbers, lemon, lime, carrots, apple, avocado, mango, raspberry, etc.

5

	Internal fertilization	External fertilization
Advantages	Greater chance of fertilization lower number of gametes required more protection for embryo (higher survival) more selective of mates	Parents don't need to be in same location at same time larger amount of offspring produced
Disadvantages	Parents must be in same location at same time lower amount of offspring produced	larger number of gametes required less/no protection for embryo (lower survival) less selective of mates larger number of gametes required

6

	Insect Pollination	Wind Pollination
Advantages	✓ process is species specific - pollinators typically only visit specific plants, allowing more success ✓ not reliant on favourable weather conditions ✓ little pollen needs to be produced	✓ no need to produce petals, nectar, fruit - energy saving ✓ not reliant on another species - more self-sustaining
Disadvantages	x reliant on another species - if insect is in trouble than plant's success also in jeopardy x need to produce petals, nectar, fruit - all energetically costly	x reliant on favourable weather conditions x much pollen needs to be produced x less chance of successful pollination

7 More variation means there is a greater chance an individual has an advantageous characteristic / adaptive feature which allows them more survival and reproductive success. Natural selection requires variation to select. If all members are the same, there is no feature which is better or worse-suited. If environment changes and adaptive feature is not present, higher likelihood of death