Quick Quiz

	Answers				Marks
Topic	**Q1**	**Q2**	**Q3**	**Q4**	
8Ba	B	A	D	D	4
8Bb	C	A	B	B	4
8Bc	A	B	B	A	4
8Bd	A	C	D	C	4
8Be	A	B	C	D	4

End of Unit Test Mark Scheme Standard (S)

Question	Part	Step	Answer	Mark scheme
1	**a**	**1st**	Seedling, small tree or sapling drawn. Must have at least one leaf.	**1 mark**
	b	**1st**	A – flowering A to B – pollination B – fertilisation C – fruit formation C to D – seed dispersal D – germination	**3 marks** – 3 marks for all six correct, 2 marks for 4 correct, 1 mark for 2 correct, otherwise 0
	c	**1st**	**C** fertilisation	**1 mark**
2		**3rd (name)** **4th (function)**	**W** – anther – makes pollen **X** – filament – supports the anther **Y** – stigma – traps/receives pollen **Z** – ovary – contains ovules/egg cells (accept: phonetic misspellings, e.g. filliment)	**4 marks** – 4 marks for names and functions all correct = step 4; 1 mark for two names correct (to a total of 2), 1 mark for two functions correct (to a total of 2) = step 2
3	**a**	**1st**	animal, fungus, protist/protoctist, prokaryote	**1 mark**
	b	**2nd**	whether they have flowers or cones	**1 mark**
	c	**4th**	any sensible suggestion (e.g. shape of leaves)	**1 mark**
	d	**5th**	*Ranunculus*	**1 mark** – do not accept misspelling
	e	**4th**	It means that scientists all over the world can be sure they are talking about the same plant/prevents confusion.	**1 mark**
4	**a**	**2nd**	**X** food store **Y** seed coat	**1 mark** – for both
	b	**2nd**	**D** root	**1 mark**
	c	**2nd**	water, oxygen, warmth (accept: phonetic misspellings, e.g. oxijen)	**2 marks** – 2 marks for all correct, 1 mark for two correct
	d	**2nd**	**B** sexual	**1 mark**

5	**a**	**4th**	It comes from an insect-pollinated flower because it is spikey. Flower N is insect-pollinated because it has red petals to attract them.	**2 marks** – 1 mark for each point
	b	**4th**	It would be smaller and/or smoother. Some students may mention that some pollen grains have 'wings'.	**1 mark**
	c	**5th**	**B** male gamete	**1 mark**
6	**a**	**5th**	**A** ovule	**1 mark**
	b	**6th**	**D** stigma	**1 mark**
	c	**6th**	To spread its seeds into new areas so that the plant can grow in new areas and spread. To make sure the offspring don't compete with the parent.	**2 marks** – 1 mark for each point
	d	**4th**	Any one of: wind – using spinners or parachutes; fruit – that animals eat; water – carries floating fruits on currents explosions – force of exploding fruits flings out seeds	**1 mark** – a description is needed for the mark. For example, do not accept 'wind'.
7		**6th**	Fewer bees will result in less pollination. Less pollination will result in less fruit/ seeds. Less fruit/seeds will mean lower profits for the farmers.	**2 marks** – 1 mark for each of 2 points up to a max of 2

Final Step Calculation

Marks	Step
0–7	1st or below
8–9	2nd
10–11	3rd
12–15	4th
16–21	5th
22–25	6th
26+	7th

End of Unit Test Mark Scheme Higher (H)

Question	Part	Step	Answer	Mark scheme
1	a	4th	It comes from an insect-pollinated flower because it is spikey. Flower N is insect-pollinated because it has red petals to attract them.	**2 marks** – 1 mark for each point
	b	4th	It would be smaller and/or smoother. Some students may mention that some pollen grains have 'wings'.	**1 mark**
	c	7th	It has wings to help it float in the air/on the breeze.	**1 mark**
	d	5th	**B** male gamete	**1 mark**
2	a	5th	**A** ovule	**1 mark**
	b	6th	**D** stigma	**1 mark**
	c	6th	To spread its seeds into new areas so that the plant can grow in new areas and spread. To make sure the offspring don't compete with the parent.	**2 marks** – 1 mark for each point
	d	4th	The spinner makes the seed fall more slowly, providing more chance for the wind to blow it away from the parent plant.	**1 mark**
	e	6th	**D** The length of the wings.	**1 mark**
	f	5th	The longer the wings, the more time the spinner takes to fall.	**1 mark**
	g	7th	straight line of best fit drawn correctly on the graph	**1 mark**
	h	4th	Any one of: fruit – that animals eat; water – carries floating fruits on currents; explosions – force of exploding fruits flings out seeds	**1 mark** – a description is needed for the mark. Do **not** accept 'water'.
3		6th	Fewer bees will result in less pollination. Less pollination will result in less fruit/ seeds. Less fruit/seeds will mean lower profits for the farmers.	**2 marks** – 1 mark for each of 2 points up to a max of 2
4	a	6th	**B** because this showed the biggest increase in percentage of seeds germinating after heat treatment.	**1 mark**
	b	7th	It allows water into the seed so that cell division and growth can start.	**1 mark**
	c	7th	Any two from: There are lots of nutrients in the soil because of the burnt plant material. There are no adult competitor plants for the seedlings. The seedlings give the species a chance to rapidly cover the whole area in just their species.	**2 marks** – 1 mark for each point up to a maximum of 2 marks
5	a	5th	It is bent to hold the anther in the right place to deposit pollen on the insect.	**1 mark**

	b	**6th**	They could mature at different times so that the stigma will not receive pollen at the same time as the anther is producing pollen.	**1 mark**
	c	**7th**	It will cause the offspring to be identical to the adult and so there will be no variation. This will mean that all the plants in an area have the same characteristics and so a sudden change in conditions may kill all of them.	**2 marks**
	d	**7th**	Self-pollination means that all the offspring plants will have the adaptations necessary to survive in that area (because they will be identical to the parent).	**1 mark**

Final Step Calculation

Marks	Step
0–5	3rd or below
6–8	4th
9–12	5th
13–16	6th
17–20	7th
21+	8th

Quick Check answers

Quick Check	Answers
8Ba	**a** Organisms are classified by looking at their characteristics; they are put into groups based on characteristics; those groups are divided again and again, with those in each group having more and more similar characteristics. Some students may also mention genus and species as the last two groups and how the names of these groups are used to give an organism its scientific name. **b** Genus and species are the last two groups in the classification system; the names of these groups are used to give an organism its scientific name and so you can tell which other organisms have similar characteristics because they are in the same genus; scientists can tell exactly what organism is being referred to using a scientific name. **c** Biodiversity is how many different species live in an area; biodiversity is important because all organisms in an area depend on one another; humans also get lots of things from different species and if we allow them to become extinct we may lose things that may become important in the future; more biodiverse areas are better at recovering from disasters; biodiversity enriches our lives.
8Ba WS	Overall procedure is outlined on Worksheet 8Ba-6.
8Bb	Students' own notes and annotations. They should clearly show that sexual reproduction needs two parents (asexual reproduction needs only one) and produces variety (but asexual reproduction does not).
8Bc	True False: 'statement' *The female parts of a flower include the ovary, stigma and style.* False: 'statement' *Insect-pollinated flowers often produce a scent and have brightly coloured flowers*. True False: 'statement' *The anther produces pollen grains.* False: 'statement' *The ovule contains a female gamete OR The pollen grain contains the male gamete.*

Quick Check	Answers
	True False: 'statement' *Some plants avoid self-pollination by having both male and female parts in the different flowers/on different plants.* True False: 'statement' *Plants try to avoid self-pollination so that their offspring have variation.*
8Bd	**1** **a** From left to right: 4, 1, 3, 2 **b** From left to right: 4 – The ovary swells and becomes the fruit. The ovules become seeds; 1 – A pollen grain lands on a stigma; 3 – The nucleus from the male gamete fuses with the nucleus in the egg cell; 2 – The pollen grain grows a pollen tube, which grows towards the ovule. **c** Far-left box circled (The nucleus from the male gamete fuses with the nucleus in the egg cell). **d** Labels could include: egg cell, fruit, ovary, ovule, pollen grain, pollen tube, seed, stigma, style. **e** Animals eat the fleshy fruit.
8Be	**1** Apple trees, bees and humans are all interdependent. The apple trees rely on bees that visit the flowers and so pollinate them. In turn, the bees rely on the apple trees for nectar/pollen, which they collect for food. Humans rely on the trees for food (apples). In turn, humans spread the seeds of the trees when they transport and eat the apples. Humans collect honey from the bees, and humans may provide hives for the bees to live in; they may even plant apple trees for the bees to collect nectar/pollen from. Award additional credit for paragraphs that have a sound overall structure and good levels of unity, cohesion, coherence and order. **2** The seed should have the seed coat, food store, small root, small shoot and embryo labelled. The seed coat protects the seed. The food store supplies glucose for respiration, which also requires oxygen as a resource. Respiration releases the energy needed for the embryo to grow. After germination, a small root appears. The root absorbs water. The shoot will grow above ground and support the leaves. Photosynthesis will occur in the leaves to make food for the plant. Photosynthesis requires the following resources: light, carbon dioxide and water.