Revision Sheet

IGCSE Biology · Unit 18 Variation and selection

7 vocabulary items · 30 marks of exam questions (6 questions)

Part 1 · Vocabulary review answer key. Section A wants the exact English spelling.

Question	Answer	Marks
1	continuous variation	1
2	discontinuous variation	1
3	mutation	1
4	alleles	1
5	natural selection	1
6	antibiotic	1
7	artificial selection	1

Multiple Choice Answers

Q8: C

Multiple Choice Answers

Q9: C

Multiple Choice Answers

Q10: C

Multiple Choice Answers

Q11: A

12(a)	*any two from:* through mutation ; (mutation is) a change in the base sequence of DNA ; (mutation is) caused by, ionising radiation / chemicals ;
12(b)(i)	*any three from:* selection of individual plants which, flower in fewer hours of daylight / show the desirable feature ; crossing these individuals to produce the next generation ; selection of offspring that show the desirable feature ; repeat for (many) <u>generations</u> ; AVP ;
12(b)(ii)	*any two from:* water ; oxygen ; a suitable temperature ;
12(b)(iii)	*any three from:* *in natural selection* selection pressure / AW, comes from the environment ; better adapted individuals (survive and) reproduce ; (always) produces characteristics suitable for the (new) environment ; slower ; affects many characteristics ;

12(c)	*any two from:* less pesticides used **;** less contamination of food with pesticides **;** less pollution / described **;** less damage to / higher yield of / higher quality of, crop **;** less risk to pollinators / non target species **;** improve health of farm workers **;** less spread of plant disease **;** increases biodiversity **;**

13(a)(i)	*any two from:* large petals **;** petals form a landing platform **;** spotted pattern (to attract insects) **;** anthers / stigma, inside petals / flower ***/*** ora **;**

13(a)(ii)	*any four from:* *advantages* **1** increased variation **;** **2** increased ability to adapt to, changing / new, environment **;** **3** makes the population less susceptible to a, disease / pest / AW **;** **4** genetic disease less likely **;** **5** *idea of* seed dispersal means there is less competition **;** **6** less risk of, endangerment / extinction **;** *disadvantages* **7** requires two, parents / plants / gametes **;** **8** requires, (named) pollinators **;** **9** takes longer / is slower **;** **10** *idea that* the increased genetic variation means that some plants might be less adapted to the environment **;** **11** ref to more energy required **;**
13(b)(i)	301 **;** cm^2 **;**
13(b)(ii)	plants in Europe have a greater leaf area than those in North America **;**
13(b)(iii)	*any five from:* **1** *ref to* mutation **;** **2** natural selection **;** **3** competition for, light / resources, (by many offspring) **;** **4** plants with a larger leaf area, have a survival advantage / are better adapted **;** **5** larger leaves, are better for photosynthesis / absorb more light **;** **6** plants with larger leaves reproduce and pass on alleles for larger leaf area **;** **7** this occurs over many generations until larger leaves are common in population **;**