

| Question number | Answer   | Notes                            | Marks |
|-----------------|--|----------------------------------|-------|
| 1 (a)           | low in fat / eq;<br>heart disease / blocks blood vessels / eq;<br>high in protein / amino acids;<br>growth / repair / eq; ignore muscles   |                                  | 2     |
| (b)             | conserves snail / natural populations / less collected / eq;   |                                  | 1     |
| (c)             | spider(s);   |                                  | 1     |
| (d)             | calcium / phosphate;   | allow if in list with other ions | 1     |
| (e) (i)         | cannot digest/breakdown <u>cellulose</u> / <u>fibre</u> / <u>roughage</u> ;<br>no absorption of <u>cellulose</u> / <u>fibre</u> / <u>roughage</u> ;<br><br>lack enzyme / cellulase;<br>lack symbiotic organisms; | ignore converse                  | max 2 |
| (ii)            | 70; ; one for 2.8 in working   |                                  | 2     |

|     |   |  |   |
|-----|---|--|---|
| (f) | (more) (glucose) metabolism /<br>(more) respiration;<br><br>heat loss / need to maintain<br>body temperature / keep warm<br>/ eq;<br><br>more active / more movement; | ignore energy use<br>/ energy loss<br><br>allow converse for<br>snails<br><br>allow converse for<br>snails<br><br>allow converse for<br>snails | 2 |
| (g) | humans + (select) desired<br>characteristics (for breeding) /<br>eq;  | allow human<br>terms such as you<br>/ we / farmers   | 1 |
| (h) | (no) bacteria / microorganism /<br>fungi / pathogen / infection /<br>disease / parasites / eq;  | ignore germs   | 1 |

**TOTAL 13 MARKS**

| Question number | Answer  | Notes   | Marks |
|-----------------|---|---|-------|
| 2 (a)           | (transfer) pollen from <u>anther</u> to <u>stigma</u> ;   | ignore stamen to carpel/style<br>ignore male to female gamete                 | 1     |
| (b)             | 1. o make honey / food;<br>2. sugar(y) / sucrose / glucose / fructose;<br>3. energy / respiration;  | 2. ignore carbohydrate  | 2     |
| (c)             | (can) produce offspring / (can) reproduce / eq;   | ignore egg / gamete / babies / children<br>production<br>ignore fertilisation | 1     |
| (d)             | 1. utation;<br>2. (different) allele / different version of a gene /<br>DNA / genetically different / eq;<br>3. resistant / resistance;<br>4. idea of survival; eg not all die from disease | 2. ignore different gene<br>3. ignore immune                                  | 2     |
| (e)             | 16;   |   | 1     |

| Question number | Answer   | Notes   | Marks |
|-----------------|--|---|-------|
| (f)             | 1. the number of <u>drones</u> the queen mates with /<br>queen may mate with different <u>drones</u> ;<br>2. each drone has a different set of alleles /<br>is genetically different;<br>3. (queen's eggs made by) meiosis /<br>have different alleles / eq; | ignore bees<br><br>ignore mutation<br><br>ignore genes  | 2     |
| (g)             | 1. disease resistant;<br>2. large quantity of honey / beeswax ;<br>3. ability to collect nectar;<br>4. fecundity / more bees / eq;<br>5. less aggressive / eq;   | 1. ignore immune / combat disease / live longer / hardier<br>2. ignore taste / flavour / quality of honey | 2     |

(Total for Question = 11 marks)