

Temperature control

Mark scheme

| | | | | |
|----|-----|---|---|--|
| 1. | (a) | 4000 | 2 | |
| | | | | <i>award both marks for correct answer, irrespective of working 1500 + 2000 + 500 gains 1 mark</i> |
| | (b) | day 2 (no mark) | | |
| | | any two from: | | |
| | | <i>max 1 mark if correct day not identified or if no day given</i> | | |
| | | • more (water in) breath / breathing | | |
| | | • more (water in) sweat / sweating <i>accept a lot of sweating</i> | | |
| | | • less (water in) urine | 2 | |
| | | <i>if no other marks awarded allow 1 mark for more water lost on day 2</i> | | |
| | (c) | (i) respiration | 1 | |
| | | (ii) cools / removes heat owtte <i>ignore 'maintains body temperature' unqualified</i> | 1 | |
| | | (iii) osmosis | 1 | |
| | | | | [7] |
| 2. | (a) | (i) thermoregulatory centre (in brain) <i>accept hypothalamus</i> | 1 | |
| | | (receptors sensitive to/measures) temperature of <u>blood</u> | 1 | |
| | | (ii) any one from: | | |
| | | • receptors (in skin) | | |
| | | • (skin) sends information / signals / impulses / messages to brain / thermoregulatory centre | 1 | |
| | (b) | any three from: | | |
| | | (cold conditions) | | |
| | | • muscle (X) contracts when cold | | |
| | | • no / less blood through capillaries | | |
| | | • no / less heat lost / radiated | | |
| | | • no / less sweat produced | | |
| | | (hot conditions) | | |
| | | • muscle (X) relaxes/does not contract when hot <i>NB X contracts when cold and relaxes when hot = 2 marks</i> | | |
| | | • (more) blood through capillaries | | |
| | | • more heat lost / radiated | | |
| | | • more sweat produced | 3 | |
| | | <i>all other points must be clearly identified by correct conditions</i> | | |

max 2 if idea of capillaries moving but ignore capillaries dilate

[6]