Unit 2 Key Area 4 Metabolism in conformers and regulators

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(a)	(i)	Negative feedback (control)/ homeostasis.	1	**Not** - Negative control.
	(ii)	Hypothalamus.	1	Accept hypothalmus. **NOT** - Hypothalus.
	(iii)	Nerves/neurons/nerve impulses/electrical impulses/through nerves.	1	**NOT** - Central nervous system Additional incorrect answers negates **eg** Hormones/nerve receptors
(b)	(i)	Blood vessels/arterioles narrow. **OR** Vasoconstriction/blood vessels constrict. **OR** Muscles contract.	1	Additional physiological responses negate; **eg** Hairs standing on end/shivering.
	(ii)	Less blood flow to the skin so less heat lost.		**NOT** - "Less heat lost (by radiation)" alone. **NOT** - Stops/prevents heat loss. **NOT** - Stops/prevents blood flow to the skin.
(c)		So enzymes work fastest/faster. **OR** So enzymes are at their optimum (temperature). **OR** Enzymes work too slowly when temperature is too low. **OR** Optimal/faster diffusion rates.	1	**NOT** - "Enzymes have an optimum temperature" alone. **NOT** - "So enzymes do not denature".

5.	(a)		2·2	1	
	(b)		As temperature increased heart rate increased.	1	NOT - The heart rate is dependent upon the temperature of the wate Direction must be indicated. NOT - As heart rate increases temperature increases.
	(c)		Increased/optimum enzyme activity/oxygen delivery. (1) **Leading to** increased respiration/ATP production. (1) **OR** Increased diffusion (1) **Leading to** increased supply of oxygen/glucose/substrates/ metabolites (1)	2	
	(d)		Behavioural (response).	1	NOT - Examples alone.

6.	a	Mitochondria are the site of aerobic) respiration/electron transport chain/electron transfer chain/citric acid cycle. which produces ATP/releases/gives out energy.(1) Pumps/active transport/transporting salt requires ATP/energy. (1)	2	
	b	So that enzymes are at their optimum activity/temperature. OR High diffusion rates.	1	NOT - enzymes have an optimum temperature NOT - so enzymes don't denature.
	c	Regulators have a wider/larger range of niche(s)/ ecosystems/ environments/ habits. OR Regulators have more niche(s)/ecosystems/ environments/ habitats. OR Conformers have a narrower/smaller range of niche(s)/ ecosystems/environments/ habitats). OR Conformers have fewer niche(s) /ecosystems/ environments/ habitats. OR Conformers have narrow niche(s) and regulators have wide niche(s).	1	