



## Homeostasis

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# 2009

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**25** The following five statements relate to homeostasis (the maintenance of stable internal conditions of the body):

- 1 Insulin helps to control the water content of the body.
- 2 Homeostasis depends only on hormones.
- 3 The pancreas helps to control the glucose content of the blood.
- 4 Both the nervous and hormonal systems are involved in homeostasis.
- 5 The skin is used to help control the body temperature.

Which statements are correct?

- A 1, 2 and 3 only
- B 1, 3 and 4 only
- C 1, 4 and 5 only
- D 2, 3 and 5 only
- E 2, 4 and 5 only
- F 3, 4 and 5 only


**Homeostasis**

# 2010

- 1 Which row of the table correctly describes what happens when body temperature rises in a human?

	<b>temperature change detected by</b>	<b>arterioles (small arteries)</b>	<b>hair erector muscles</b>	<b>capillaries in the skin</b>
<b>A</b>	cerebral cortex	dilate	relax	move nearer skin surface
<b>B</b>	cerebral cortex	constrict	contract	move away from skin surface
<b>C</b>	cerebral cortex	dilate	contract	do not move
<b>D</b>	hypothalamus	constrict	relax	move away from skin surface
<b>E</b>	hypothalamus	dilate	relax	do not move
<b>F</b>	hypothalamus	constrict	contract	move nearer skin surface



## Homeostasis

- 25 The hormonal and nervous systems are often compared because of their similar roles in the body.

Which of the following statements about the two systems are true?

- 1 The nervous system relies only on electrical impulses to work.
  - 2 Both the hormonal and nervous systems activate target structures.
  - 3 The fastest responses in the body are produced by the nervous system.
  - 4 Only the hormonal system relies on the activity of chemicals.
  - 5 Parts of the hormonal system may be controlled by the central nervous system.
- A** 1, 2 and 3
- B** 1, 2 and 4
- C** 1, 2 and 5
- D** 2, 3 and 4
- E** 2, 3 and 5
- F** 3, 4 and 5



## Homeostasis

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 2011
 

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Gland	Hormone	One function
Adrenal	Adrenaline	
	Oestrogen	Female secondary sexual characteristics
	Antidiuretic hormone (ADH)	
Testes		Male secondary sexual characteristics
Pancreas		Regulates blood glucose level

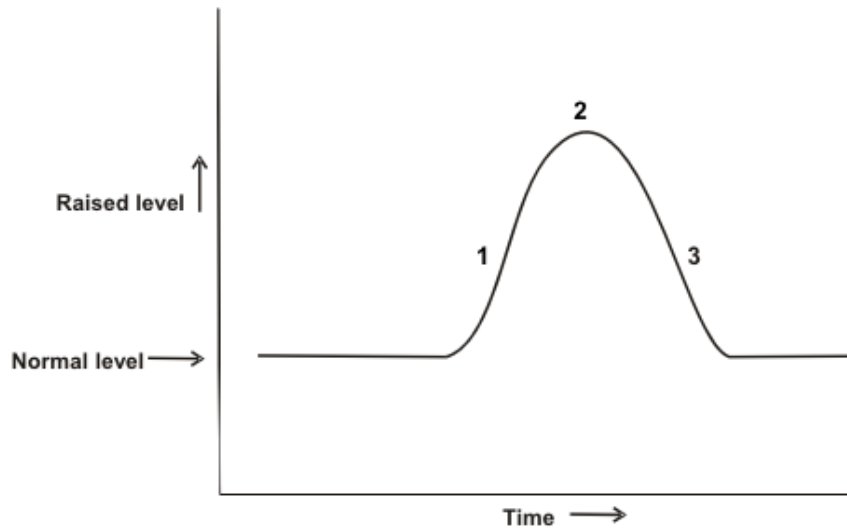
Which word or statement does **not** correctly fit into one of the gaps left in the table?

- A Insulin
- B Increases heartbeat rate
- C Pituitary
- D Testosterone
- E Ovary
- F Carbohydrase
- G Regulates water level in blood



## Homeostasis

- 25 The graph below shows how one factor in the internal environment in a person changes, and is returned to a normal level.



If someone has a condition which makes their homeostatic system less responsive, how would the shape of the graph be altered?

- A 1 would be earlier
- B 1 would be less steep
- C 2 would be earlier
- D 2 would be higher
- E 3 would be steeper
- F 3 would be earlier



## Homeostasis

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# 2012

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1 Which of the following could result in a homeostatic response?

- 1 A rise in an internal condition.
  - 2 A reduction in an internal condition.
  - 3 A rise in an external condition.
  - 4 A reduction in an external condition.
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- A 1 and 2 only
  - B 1 and 3 only
  - C 2 and 4 only
  - D 3 and 4 only
  - E 1, 2 and 3 only
  - F 1, 2, 3 and 4



## Homeostasis

- 17 Consumption of alcohol leads to an increase in dilute urine production by reducing the level of the hormone ADH.

Which of the following are correct statements about alcohol and/or ADH?

- 1 ADH travels in the bloodstream.
  - 2 There is a positive correlation between the level of ADH and the production of dilute urine.
  - 3 Increased ADH leads to increased formation of dilute urine.
  - 4 A reduced level of ADH could lead to dehydration.
- A 1 and 2 only
- B 1 and 3 only
- C 1 and 4 only
- D 2 and 3 only
- E 2 and 4 only
- F 3 and 4 only



## Homeostasis

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# 2013

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- 1 Which of the following applies to both the nervous system and the endocrine (hormonal) system?
1. can be involved in homeostasis
  2. can involve chemicals
  3. can involve the brain
- A None of them
- B 1 only
- C 2 only
- D 3 only
- E 1 and 2 only
- F 1 and 3 only
- G 2 and 3 only
- H 1, 2 and 3





## Homeostasis

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# 2014

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- 21** In order to function, the cells of the brain need large amounts of energy. Any reduction in the function of these cells can have serious consequences for the body. For example, a loss of oxygen supply to the brain can cause unconsciousness within 5–10 seconds.

Which of the following statements are true?

- 1** Neurons in the brain are capable of relying on anaerobic respiration for long periods of time.
  - 2** The homeostatic systems of the body will constantly have to work to resist temperature increases in the brain.
  - 3** An overdose of insulin in the body could produce a serious loss of brain function, such as inducing a coma.
  - 4** During normal functioning of neurons in the brain, high levels of carbon dioxide could be produced.
- A** 1 and 2 only
- B** 1 and 3 only
- C** 2 and 3 only
- D** 2 and 4 only
- E** 1, 3 and 4 only
- F** 1, 2 and 4 only
- G** 2, 3 and 4 only