



Homeostasis

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

2013

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

2014



Homeostasis

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.

- 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

2012

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

2012

Homeostasis

1

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

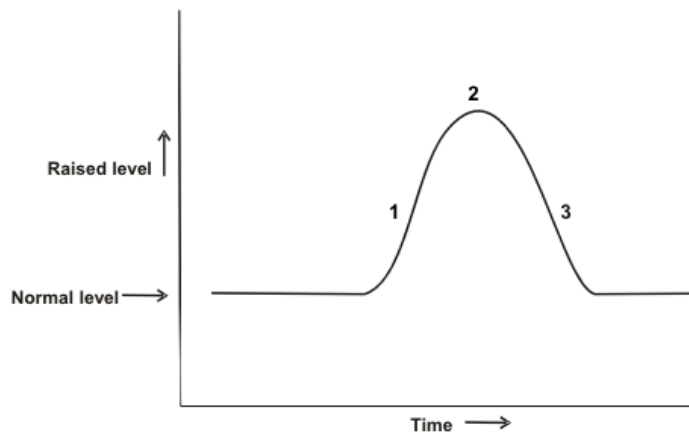
Which word or statement does **not** correctly fit into one of the gaps left in the table?

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

2011

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

2011

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

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

2010



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

2010

- 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

2009