

Biology

B5. Homeostasis

Revisiting Booklet

Name:

Introduction to homeostasis

Define the term homeostasis:

.....

.....

.....

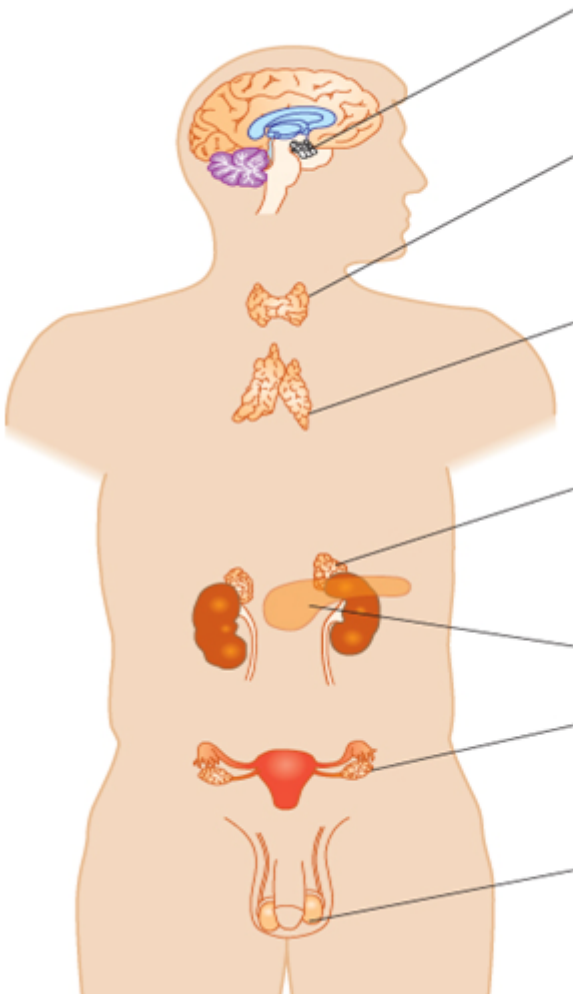
What does homeostasis control in the human body (List at least three things):

.....

.....

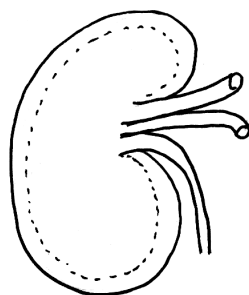
.....

Label the diagram below: use the keywords below!

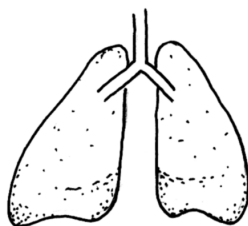


Pituitary gland, thyroid gland, pancreas, ovaries, testes, adrenal gland, thymus

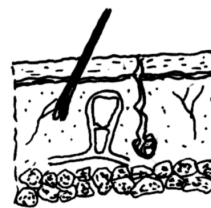
The diagram shows three organs involved in removing waste products from the body.



A



B



C

(a) Name the organs A, B and C.
(3 marks, 3 lines)

A. [1]

B. [1]

C. [1]

Where is insulin produced?

.....

Q1.The human body produces many hormones. (MS at the back)

(a) (i) What is a *hormone*?

.....
.....

(1)

(ii) Name an organ that produces a hormone.

.....

(1)

(iii) How are hormones transported to their target organs?

.....

(1)

Match the following definitions to their key-words:

Glucose	A hormone (chemical messenger) it tells your body to change glucose into glycogen. It is made by the pancreas.
Glycogen	A hormone that tells your liver to change glycogen back into glucose. Also made by the pancreas.
Insulin	A sugar used in respiration to make energy
Glucagon	A storage substance made of glucose, it is stored in the liver.

What effect does insulin have on blood glucose concentration?

.....

.....

.....

Diabetes:

What is type I diabetes and who does it usually affect?

.....

.....

.....

What is type II diabetes and who does it usually affect?

.....

.....

.....

What are the main symptoms of diabetes?

.....

.....

.....

Temperature regulation:

Describe what happens in the following scenarios (make reference to vasodilatation, vasoconstriction and behavioural changes).

When we get too cold:

.....

.....

.....

When we get too hot:

.....

.....

.....

Excess carbon dioxide is removed from the body by:

.....

.....

Complete the DART:

Thermoregulation

- Heat is ____ by sweating (evaporation), hairs lying flat and movement of blood to skin surface (vasodilation).
- Heat is _____ by stopping _____, shivering, raising hairs (insulation) and movement of blood away from skin surface (_____).
- Controlled by the _____ in the brain.

Keywords: lost, vasoconstriction, hypothalamus, sweating, retained,

Osmoregulation:

Define the term above:

.....
.....

What is the name of the hormone that is used to regulate water content? (abbreviated version accepted):

.....
.....

The Nervous System and Reflex Arc

Parts of the Nervous System

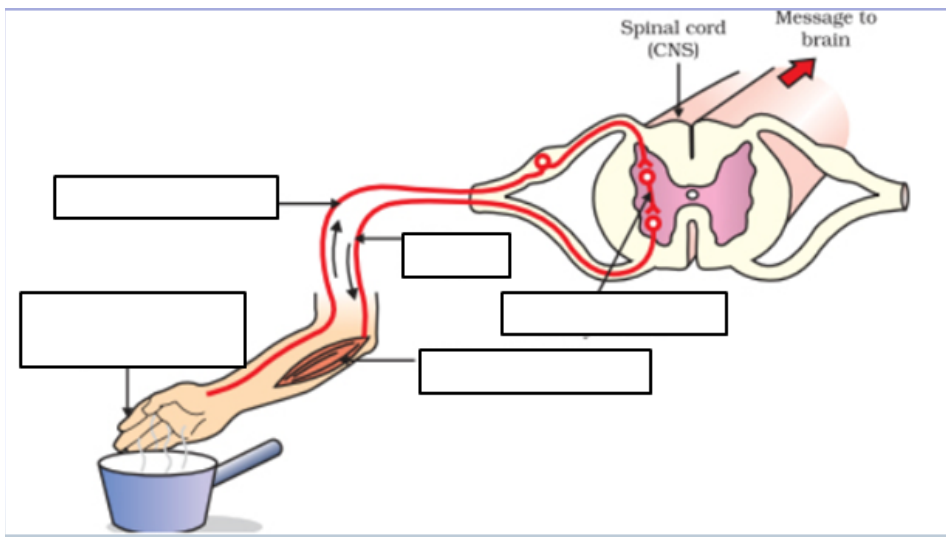
The is made up of three main parts;

-
-
-

It detects such as light, sounds, temperature, pressure, pain and co-ordinates the body's response.

What are the 5 sense organs and what do they sense?

Organs	Stimulus it detects...



There are three types of neurons – where do these carry impulses from and to?

1. Sensory neurons – The neurones that carry information from the r_____ to the c_____ n_____ s_____
2. Relay neurons - The neurones that carry information from the s_____ n_____ to the m_____ n_____
3. Motor neurons – The neurones that carry information from the central nervous system to the e_____

SECTION 2:

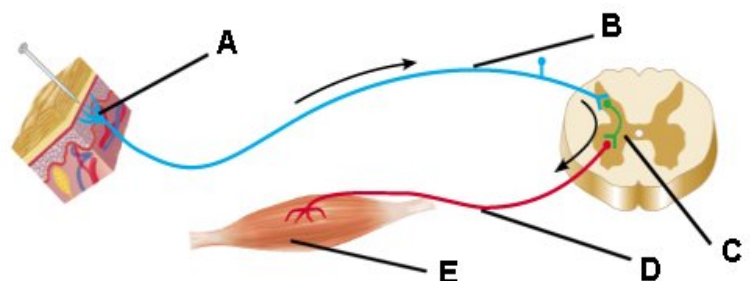
Reflex arcs

1. What is a reflex reaction?

Key words: rapid, unconscious, automatic.

2. What is the purpose of a reflex reaction?
3. What is missed out in a reflex reaction?

Label the parts of the diagram:



A:

B:

C:

D:

E:

(Key words: relay neurone, motor neurone, receptor, sensory neurone, effector).

Ext:

Write a summarized description of a reflex arc (the passage of information from a receptor to an effector)

1)

2)

3)

4)

5)

Human reproduction:

Exam questions: Mark scheme at the back

List as many hormones as you can that are involved in the regulation of the menstrual cycle:

1.....

2.....

3.....

1 (b) Describe how the hormones FSH, oestrogen and LH are involved in the control of the menstrual cycle.

.....
.....
.....
.....
.....
.....
.....
.....
.....

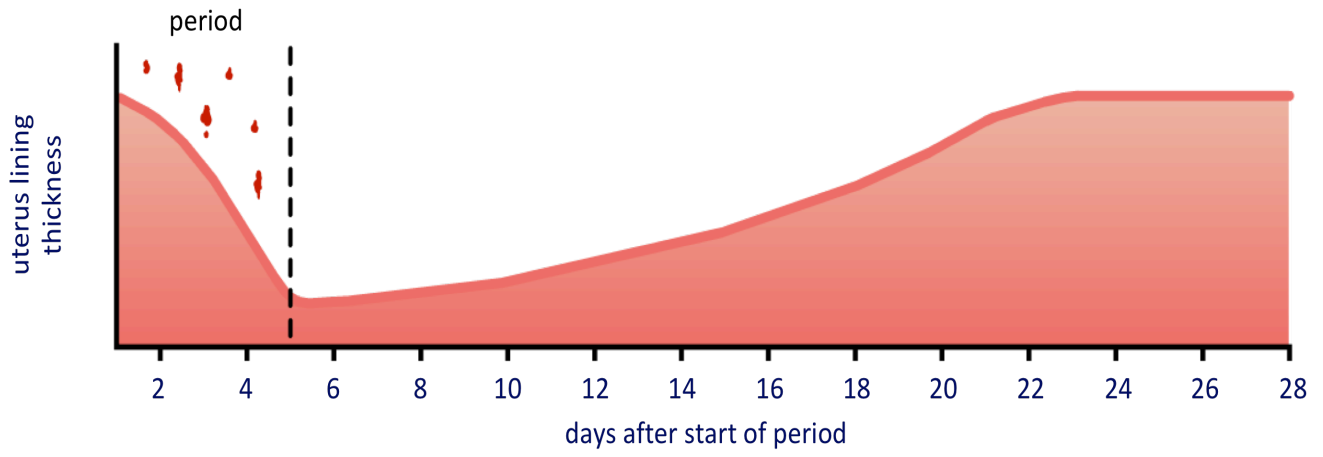
(3)
(Total 6 marks)

What day does female ovulation typically occur?

.....
.....

What role does the endometrium have?

.....
.....
.....
.....



What does the graph show?.....

WHY does the graph look like this?.....

What inside the female body causes the menstrual cycle to occur?.....

Mark scheme for reproduction

M1. (a) (i) any **one** from:

- chemical messenger / message
allow substance / material which is a messenger
- chemical / substance produced by a gland
allow material produced by a gland
- chemical / substance transported to / acting on a target organ
- chemical / substance that controls body functions

1

(ii) gland / named endocrine gland
brain alone is insufficient
allow phonetic spelling

1

(iii) in blood / plasma **or** circulatory system **or** bloodstream
accept blood vessels / named
*do **not** accept blood cells / named*

1

(b) *each hormone must be linked to correct action apply list principle ignore the gland producing hormone*

FSH stimulates oestrogen (production) / egg maturation / egg ripening
ignore production / development of egg

1

oestrogen inhibits FSH

allow oestrogen stimulates LH / build up of uterine lining

1

LH stimulates egg / ovum release / ovulation

accept LH inhibits oestrogen
accept LH controls / stimulates
growth of corpus luteum
ignore production of egg

1