Reflex arc

Goes through the CNS

1. Stimulus detected by receptors, impulses sent along a sensory
2. neurone to the CNS
3. When impulse reaches synapse between relay neurone and sensory neurone chemicals are released. These chemicals cause impulses to be sent along a relay neurone
4. Synapse between relay and motor neurone the same thing happens, chemicals are released and cause impulse to be sent along motor neurone.
5. Impulses travel along the motor neurone to the effector
6. The effector organ then responds
7. Neurones in reflex go through spinal cord or unconscious parts of the brain – quicker as you don't need to think about it

Stimulus – recpetor – sensory neurone – relay neurone – motor neurone – effector – response

Hormones

Chemical messengers sent in the blood

Carried by blood plasma

Only affect particular cells called target cells

Produced by various glands

Travel at the speed of blood

Hormones are chemical messengers, travel in blood to activate target cells

Pituitary gland: produces LH and FSH

Ovaries: produce Oestrogen

Hormones Vs Nerves

Nerves	Hormones
Very fast	slower
Act for very short time	Act for a long time
Act on precise area	Act on a general area

Warm Up and Exam Questions

what are the five sense organs in the human body?

Eyes, ears, nose, skin, tongue

In what form is information transmitted along nerve cells?

electrical impulses

What are the two different types of effectors in the human body

Glands and muscles

What name is given to the connection between two nerve cells?

Synapse

What are Hormones secreted by?

Glands

Give one difference between a nervous response and a hormonal response?

nervous responses are much quicker

1a) reflex action

bi) B

ii) D

c) when the impulse reaches the end of the neurone chemicals are released which diffuse across the gap and then trigger a new electrical impulse to be sent in the next neurone **(2 marks)**

d) **give one physiological advantage to the body of these automatic responses.**

keeps you safer as you react to a danger instantly. Minimise damage to the body **(1 mark)**

2) FSH is produced in the pituitary gland it's carried round the body in the blood plasma and acts on target cells in this case the ovaries and stimulates them to produce oestrogen **(3 marks)**

Warm up Questions

Describe what happens at day 1 of the menstrual cycle

the lining of the womb breaks down and bleeding begins

What is phototropism?

phototropism is how plants are sensitive to light and grow towards light

Name the hormone that controls phototropism

auxin

List four things that need to be kept constant in the body

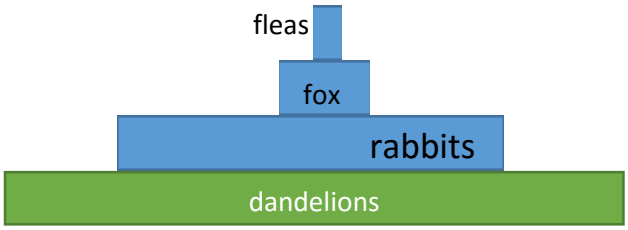
ions, water, temperature, sugar levels

Why is it important that the human body is kept at 37 degrees C?

because enzymes work best at this temperature

Pyramids of Biomass

- Less energy in each trophic level
- Fewer organisms in each trophic level
- Each bar or trophic level represents mass of living material
- Bottom bar is the producer
- 2nd bottom is primary consumer
- 3rd bottom is secondary consumer



Energy Transfer

1. Energy from the sun is source for nearly all life on earth
2. Green plants and algae use small percentage of sun's energy to photosynthesise
3. Respiration supplies energy for all life processes including movement. Most energy is lost to the surroundings as heat. Especially true in mammals and birds whose bodies are kept at constant temperature
4. Some material is inedible so doesn't pass to next stage. Energy also wasted in faeces
5. This is why biomass pyramids decrease at each level
6. Explains why there is no many food chains with more than 5 trophic levels because so much energy is lost there isn't enough to support any more organisms

Warm up Questions

what is a trophic level

the energy stage on a pyramid of biomass or a feeding level in a food chain

what is biomass

the mass of the living material in a trophic level

why do most food chains have no more than 5 trophic levels?

because there is not enough energy to support it as so much gets lost at each trophic level

What is a stable community

a stable community is when the material taken out of the soil is balanced by those that are put back in

name two types of organisms that remove carbon dioxide from the atmosphere using photosynthesis

green plants and algae

name the process that releases carbon dioxide from fossil fuels.

combustion