Topic 5 Homeostasis and Response

Complete the flow chart for a ***nervous system response*** of a dog seeing and chasing a cat.

Order of a nervous response	
Step	**Description**
Stimulus	
Receptor Cells	
Sensory Neurone	
Coordination centre	
Motor Neurone	
Effector	
Response	

Senses and Sense organs	
Stimulus	**Sense Organ**
Light	
	Tongue
Smell	
Touch	
	Ear

(BIOLOGY ONLY) Common problems of the eye and new technology:

Accommodation –

Myopia –

Hyperopia –

Contact lenses –

Laser eye surgery –

Replacement lenses -

Complete the flow chart for a ***reflex response*** of someone standing on a hot pin. Remember - SRSRMER

Order of a Reflex	
Step	**Description**

(BIOLOGY AND HIGHER ONLY) The Brain:

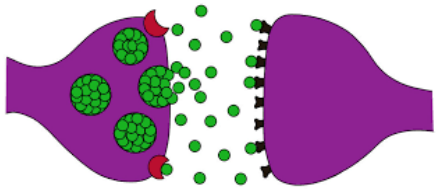
1. State the role of:
   - Cerebral cortex -
   - Cerebellum -
   - Medulla -
2. Describe the ways of studying the brain:
   - Brain damage -
   - Electrical stimulation -
   - MRI scans -
   - Problems studying the brain -

Glands and Hormones		
Gland	**Hormone**	**Function**
Pituitary		
Thyroid		
Pancreas		
Adrenal		
Ovaries		
Testes		

(BIOLOGY AND HIGHER ONLY) The Eye:

1. State the role of:
   1. Pupil -
   2. Iris -
   3. Retina -
   4. Optic nerve -
   5. Suspensory ligaments -
   6. Ciliary muscles -
2. Describe how the eye focusses light:

Describe how a synapse works:



Endocrine system:

1. What is a hormone?

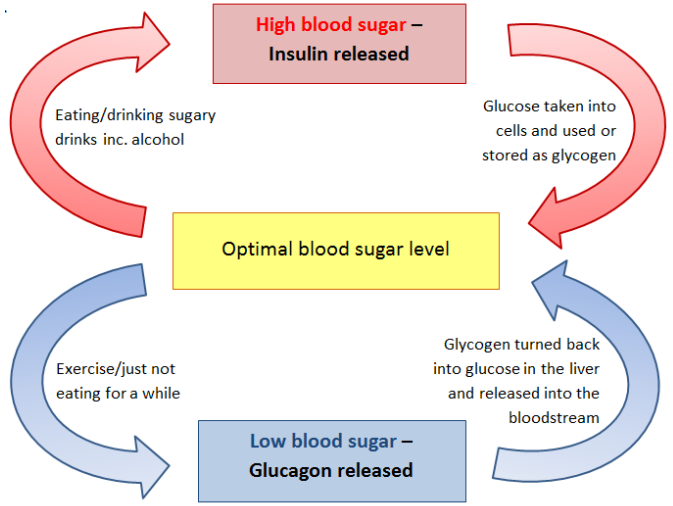
2. What is an endocrine gland?

3. Why is the pituitary gland called a master gland?

Describe how the following control blood glucose:

1. Insulin

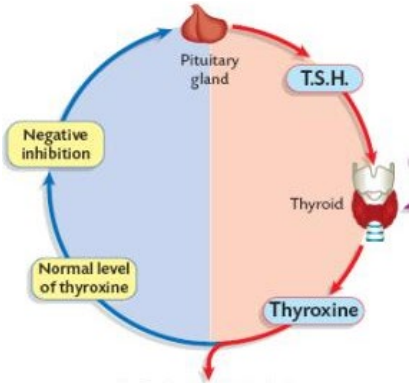
2. Glucagon (HIGHER)



(HIGHER) Negative feedback:

1. Describe what negative feedback is in terms of thyroxine.

2. Why can adrenalin not be used in a negative feedback system?



Comparing Types of Diabetes		
Question	**Type 1**	**Type 2**
Cause?		
Symptoms?		
Treatment?		
Cure?		

Describe the steps involved in IVF:

1. Hormones given to the mother –

2. Collect eggs –

3. Eggs are fertilised in a laboratory –

4. Fertilised eggs are preserved –

5. Ball of cells created –

What is the treatment for women who do not make enough FSH?

Describe the role of each of the hormones in the menstrual cycle:

FSH

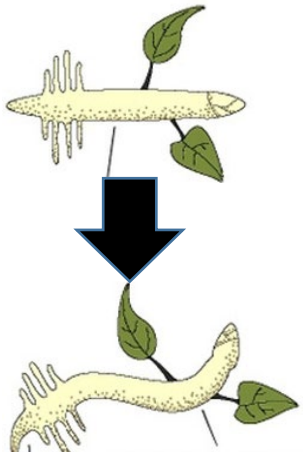
LH

Oestrogen

Progesterone

Fertility Treatments	
Method	**Description**
Hormone-based contraception	
Chemical methods	
Barrier methods	
Intrauterine devices	
Abstinence	
Surgical methods	

Describe the effects of auxin on roots and shoots.



Plant hormones – Define these:

Phototropism:

Gravitropism:

(BIOLOGY ONLY) What is an advantage and disadvantage to using plant hormones?

A -

D -

Advantages and Disadvantages of Fertility Treatments	
Advantages	Disadvantages

(BIOLOGY ONLY) How can plant hormones be used?

Auxins –

Gibberellins –

Ethene –

How is temperature controlled:

Receptors –

Brain –

1. Describe the functions of the kidney:

2. Explain how the kidneys work:

3. Explain what selective reabsorption means:

1. Describe how each of the waste products are removed from the body:
   - Carbon dioxide –
   - Urea –
2. How is urea produced and why does it need to be removed?

3. Where do all of the waste products come from?

Topic 5 (B12) Homeostasis in Action (BIOLOGY ONLY)

Comparing Kidney Treatments

Treatment	Description of treatment	Advantages	Disadvantages
Dialysis			
Kidney Transplant			

Homeostasis

Factor	Too High	Too Low
Temperature	Vasodilation – Sweating -	Vasoconstriction – Shivering – Sweating reduced -
Water (Concentration of Mineral ions)	Concentrated urine – More ADH – Kidney reabsorbs more water –	Dilute urine – Less ADH – Kidney reabsorbs less water –