Year 9 Biology Part B Revision

**Excretory System**

1. Name the organs involved in excretion?

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| Kidneys (urinary system), skin, lungs |
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1. Label the following diagram of a Kidney using the terms: Renal Artery, Renal Vein, Cortex , Renal Pelvis, Medulla, Ureter



1. Explain the role of the following in the excretory system

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| Part | Role |
| Bladder | Stores urine  |
| Renal Artery  | Transports blood to the kidney to be filtered  |
| Ureter | Transports urine away from the kidney and towards the bladder |
| Skin | Sweats |
| Lungs | Removes carbon dioxide  |

1. Label the following diagram of the urinary system



1. Explain why a person’s urine is darker when they are dehydrated

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| Because there is less water in the urine and it is therefore more concentrated  |

**Immune System**

1. What is non-specific immunity and what organs have a role in it?

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| The bodies barriers to pathogens that are not specific to a type of pathogen. It includes the skin  |
| Stomach – very acidic and can trigger diarrhoea and vomiting  |
| Eyes – the enzyme lysozyme kills bacteria and tears wash away dirt and dust |
| Trachea – covered in a mucous membrane  |
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Define the following terms

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| Term | Definition |
| Antigens | A foreign substance (eg a microorganism) which triggers an immune response  |
| Antibodies | Y shaped proteins that attach to antigens and attract phagocytes  |
| Immunity | Ability of a person to resist infection  |
| Pathogen | A microorganism that can cause disease  |
| Disease  | Anything that causes the body to stop working normally |

1. Explain how vaccines work

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| Weakened or dead virus causes antibodies to be produced. Antibodies remain in your  |
| Body (memory cells). Therefore if your body is invaded by this virus then the immune  |
| System is able to respond quickly.  |
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1. What is the role of B-Cells (B Lymphocytes)?

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| B-cells are covered in receptors which look for matching antigens. They produce  |
| Antibodies which target particular antigens. Antibodies then bind to the antigens and |
| Attract phagocytes  |
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1. What is the role of T-Cells (T-Lymphocytes)?

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| Attack cells that have become infected by causing the cell to self-destruct  |
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1. How is pus formed?

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| Pus is formed from dead white blood cells and bacteria |
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**Nervous System**

1. Fill in the missing labels on the diagram of a reflex arc below



1. Define the following terms

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| Term | Definition  |
| Receptor  | Nerve ending or other structure which senses stimuli giving organisms sensitivity to the environment around them |
| Reflex Arc | The nerve pathway involved in a reflex action. Following the path of sensory neuron, interneuron, and motor neuron and by-passing the brain |
| Dendrite | The branched part of a neuron which receives impulses from other cells and conducts them towards the cell body |
| Cell Body | The part of the neuron which contains the nucleus  |
| Axon | Conducts impulses away from the cell body and into other cells |

1. Label the following diagram of a neuron



**Endocrine System**

1. Compare how the endocrine and nervous systems work

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| **Characteristic** | **NERVOUS SYSTEM** | **ENDOCRINE SYSTEM** |
| Type of message: | Electrical impulses | Hormones |
| Message transported by: | Neurons | Blood stream |
| Cells affected | Muscles/glands/other neurons | All cells  |
| Type of response: | Local, specific | General, widespread |
| Time taken to respond: | Rapid | Slow |
| Duration of response: | Brief | Longer lasting  |

1. What is a hormone?

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| Chemical messengers transported by the blood |
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1. Name the endocrine glands and where they are located in the body

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| **Gland** | **Location** |
| Hypothalamus | Brain |
| Pituitary Gland | Brain |
| Thyroid Gland | Neck |
| Parathyroid | Neck |
| Thymus | Chest (under breast bone) |
| Pancreas  | Abdomen (behind stomach) |
| Adrenal Glands | On top of Kidneys  |
| Ovaries | Lower abdomen of women |
| Testes | Within the scrotum  |

1. Define the term homeostasis

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| Maintenance of constant internal conditions  |
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