AS Biology Unit 1 Key Terms and Definitions

Make sure you use these terms when answering exam questions!

Chapter 1 – Causes of Disease

Book Ref	Key Term	Definition
1.1	Pathogen	A micro-organism that causes disease
1.1	Transmission	Passing a pathogen from one individual to another
1.2	Correlation	A change in one variable is reflected by a change in another e.g. incidence of cancer increases as number of cigarettes increases
1.2	Cause	There is experimental evidence to prove that one factor causes another
1.3	Risk	A measure of the probability that damage to health will occur as a result of a given hazard
1.3	Lifestyle Factors	Factors to do with how we live that contribute to suffering a disease. These are in our power to change.

Chapter 2 – Enzymes and the Digestive System

Book Ref	Key Term	Definition
2.1	Digestion	Physical and chemical breakdown of food
2.1	Hydrolysis	Splitting up of molecules by adding water to them. Enzymes do this to help break down molecules.
2.1	Assimilation	Incorporating broken down molecules into body tissues/using them in processes
2.2	Monomer	One of many small molecules that combine to form a larger one
2.2	Polymer	Larger molecule made up of repeating smaller molecules
2.3	Condensation Reaction	When 2 monosaccharides combine, water is removed
2.3	Glycosidic Bond	The bond in a disaccharide
2.5	Peptide Bond	The bond between 2 amino acids in a protein, formed by a condensation reaction
2.5	Polypeptide	A long chain of amino acids
2.5	Hydrogen Bonds	Weak bonds between oxygen and hydrogen holding the secondary structure of a protein in a coil
2.6	Activation Energy	The minimum amount of energy needed to bring about a reaction
2.6	Active site	The region on an enzyme where the substrate fits

2.6	Substrate	The molecule on which the enzyme acts
2.6	Enzyme-Substrate Complex	Formed when an enzyme and a substrate fit together and form temporary bonds
2.7	Denaturation	Permanent changes in the structure of a protein; enzyme's active site changes shape so the substrate no longer fits
2.8	Competitive Inhibitor	Molecule that binds to the active site of an enzyme
2.8	Non-competitive inhibitor	Bind to the enzyme at a position other than the active site

Chapter 3 – Cells and Movement in and out of them

Book Ref	Key Term	Definition
3.1	Resolution	The minimum distance apart 2 objects are, so that they look like separate objects under the microscope
3.1	Cell Fractionation	The process by which cells are broken up and the organelles separated out
3.1	Prokaryotic Cells	Cells that lack a nucleus and any membrane-bound organelles
3.1	Eukaryotic Cells	Cells that have a nucleus, chromosomes and other membrane-bound organelles
3.4	Saturated Lipids	Fatty acids with only C-C single bonds
3.4	Unsaturated Lipids	Fatty acids with one or more C=C double bonds
3.4	Hydrophilic	Attracted to water
3.4	Hydrophobic	Attracted to fat
3.5	Fluid-mosaic model	The structure of a cell surface membrane and its various molecules
3.5	Extrinsic Proteins	Proteins on the surface of the bilayer
3.5	Intrinsic Proteins	Proteins spanning the bilayer
3.6	Diffusion	The net movement of molecules or ions from a region of high concentration to a region of low concentration
3.7	Osmosis	The passage of water from a region of high water potential to a region of low water potential, across a partially permeable membrane
3.8	Active Transport	The movement of molecules or ions into or out of a cell from a region of lower concentration to a region of higher concentration using energy and carrier molecules

Chapter 4 – Lungs and Lung Disease

Book Ref	Key Term	Definition
4.2	Ventilation	Breathing of air in and out of the lungs
4.2	Pulmonary Ventilation	Tidal Volume x Ventilation Rate
4.3	Short Diffusion Pathway	Thin alveoli walls allow materials to cross quickly as the path is short
4.3	Diffusion Gradient	Movement of air and blood help to maintain diffusion gradients – keep Oxygen moving in and CO_2 out
4.4	Course of infection of TB	The path the disease follows when a person is infected, including the primary and secondary infection
4.5	Pulmonary Fibrosis	Thickening of lung epithelia due to scarring
4.5	Asthma	An allergic reaction where histamine is released and the airway linings become inflamed
4.5	Emphysema	Destruction of the elastic tissue in the lungs due to smoking

Chapter 5 – The Heart and Heart Disease

Book Ref	Key Term	Definition
5.2	Atrial Systole	Contraction of the atria
5.2	Ventricular Systole	Contraction of the ventricles
5.2	Diastole	Relaxation of the heart
5.2	Cardiac Output	The volume of blood pumped by one ventricle of the heart in one minute
5.2	Myogenic	Contraction of the heart is initiated from within the muscle itself
5.2	Sino-atrial node	SAN, sends out the initial wave of electrical activity to make the atria contract
5.2	Atrio-ventricular node	AVN, sends a wave of electrical activity down the bundle of His, making the ventricles contract from the base upwards
5.3	Atheroma	A fatty deposit in the wall of an artery
5.3	Thrombosis	When an atheroma breaks and a blood clot forms
5.3	Aneurysm	Weakened artery walls swell and may burst
5.3	Myocardial Infarction	A heart attack
5.3	Low-density lipoproteins	Transport cholesterol to tissues that may get deposited

5.3	High-density lipoproteins	Remove cholesterol from tissues

Chapter 6 – Immunity

Book Ref	Key Term	Definition
6.1	Non-Specific Defences	Mechanisms that don't distinguish between one type of pathogen or another e.g. skin
6.1	Specific Defences	Mechanisms that do distinguish between different pathogens e.g. lymphocytes
6.2	Phagocytosis	Pathogens are engulfed into vesicles (called phagosomes) and broken down by enzymes
6.3	Antigens	Part of an organism that is recognised as non-self and triggers an immune response (usually they are proteins)
6.3	Cell-mediated Immunity	T lymphocytes recognise antigen-presenting cells that have been invaded and undergo mitosis to respond
6.4	Humoral Immunity	Immunity involving B cells and antibodies
6.4	Antigenic Variability	Viruses such as flu have many different strains with different antigens on them
6.5	Antibodies	Proteins synthesised by B cells, consisting of heavy and light chains and variable and constant regions
6.5	Antigen-Antibody Complex	Formed when antigens bind to a specific site on the antibody
6.5	Complementary Shape	Antigens have a shape that means they fit into their specific antibody
6.5	Monoclonal Antibodies	Isolation and cloning of a single type of antibody
6.6	Passive Immunity	The introduction of antibodies from an outside source
6.6	Active Immunity	Stimulation of antibody production by the individual's own immune system
6.6	Vaccination	The introduction of a substance into the body with the purpose of stimulating active immunity against a particular disease
6.6	Herd Immunity	Vaccinating most of a population so that no-one has the disease and transmission is stopped