N5 Biology CB1 Cell Structure GLOSSARY. ANSWERS

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| --- | --- |
| word / term | meaning |
| total magnification |  power of the eyepiece x power of the objective lens |
| stain | chemical used to show the cell components more clearly under a microscope |
| coverslip | used to keep the specimen flat when preparing a slide |
| micrometer(μm) | 1/1000th of a millimetre |
| plant cell | typically contains – nucleus, membrane cytoplasm, cellulose cell wall, vacuole, mitochondria, chloroplasts, ribosomes |
| animal cell | typically contains – nucleus, membrane cytoplasm, mitochondria, ribosomes |
| fungal cell | typically contains – nucleus, membrane, cytoplasm, cell wall, vacuole, mitochondria, ribosomes |
| bacterial cell | typically contains – membrane, cytoplasm, cell wall, one circular chromosome, several plasmids, ribosomes |
| cell wall | supports the cell |
| mitochondria | site of some chemical reactions for aerobic respiration |
| chloroplasts | site of photosynthesis |
| cell membrane | controls what moves into / out of the cell |
| cytoplasm | site of many of the cell’s chemical reactions |
| vacuole | contains sugary solution called sap |
| ribosome |  site of protein synthesis |
| plasmids | circular piece of DNA |
| cellulose | chemical that plant cell walls are made of  |

N5 CB2 Transport Across Cell Membranes GLOSSARY ANSWERS

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| word /term | meaning |
| phospholipids & proteins | the two main components of a membrane |
| selectively permeable | feature of the cell membrane, allowing only some molecules to cross it. |
| passive transport | movement across a cell membrane that requires no energy from the cell. |
| osmosis & diffusion | examples of passive transport |
| diffusion | the movement of molecules down a concentration gradient from area of higher to area of lower concentration. |
| Examples of diffusion  | glucose moving from the blood to the cells for respiration, oxygen moving from the lungs to the blood  |
| osmosis | the movement of water molecules from an area of higher water concentration to an area of lower water concentration, across a selectively permeable membrane. |
| burst | effect of being placed in a solution of higher water concentration on animal cells  |
| shrink | effect of being placed in a solution of lower water concentration on animal cells  |
| turgid | effect of being placed in a solution of higher water concentration on plant cells  |
| plasmolysed | effect of being placed in a solution of lower water concentration on plant cells  |
| active transport | the movement of molecules and ions from an area of low concentration to an area of high concentration, against a concentration gradient. |
| energy | required by membrane proteins for active transport |

N5 Biology CB3 DNA and the Production of Proteins GLOSSARY ANSWERS

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| word / term  | meaning |
| nucleus | location of the genetic information in a cell |
| chromosome | thread like structures, made of DNA, in the nucleus |
| DNA | Deoxyribonucleic Acid, the chemical that chromosomes are made of |
| double-stranded helix | structure of a molecule of DNA  |
| proteins | the type of substance that DNA carries the instructions to make. |
| gene | a section of DNA which codes for one type of protein. |
| bases in DNA | A – Adenine, T - Thymine, C - Cytosine, G - Guanine |
| genetic code | the sequence of the four bases  |
| complementary base pairing | A always pairs with T & G always pairs with C. |
| sequence of the amino acids | what makes the shape (and therefore function) of a protein |
| sequence of bases | what determines the sequence of amino acids in a protein |
| ribosome | site of protein synthesis |
| mRNA | transports a complimentary copy of the genetic code from the nucleus to the ribosome in the cytoplasm of a cell. |
| triplets of bases | how the genetic code is written |

N5 Biology CB4 Proteins GLOSSARY ANSWERS

|  |  |
| --- | --- |
| word / term | meaning |
| amino acids | sub units of proteins  |
| sequence of amino acids | what determines the shape and function of proteins  |
| protein molecules | part of the plasma membrane in the phospholipid bilayer |
| hormones | made of protein – chemical messengers carried in the blood |
| antibodies | made of protein – part of the immune response to infection |
| enzymes | made of protein - biological catalysts, speed up reactions & made by all living cells**.** |
| active site | part of an enzyme molecule which is complementary to the shape of a specific substrate (so each enzyme will only work on one substrate). |
| degradation | type of reaction where large molecules are broken down into smaller molecules |
| synthesis | type of reaction where small molecules are built up into larger molecules  |
| Phosphorylase | enzyme for: Glucose -1- Phosphate ­-> Starch |
| Amylase | enzyme for: Starch -> Maltose |
| Pepsin | enzyme for: Protein -> Peptides |
| Lipase | enzyme for: Fat -> Fatty Acids and Glycerol |
| Catalase | enzyme for: Hydrogen peroxide (H2O2) ->Water (H2O) & Oxygen(O2) |
| slow  | speed of enzyme controlled reactions at low temperatures.  |
| increases rate | effect of increasing temperature on rate of enzyme controlled reaction |
| denatured (changes shape of active site) | effect of high temperatures (over 40oC) on enzymes |
| reaction slows then stops | effect of increasing temperature over 40oC, on enzyme controlled reactions |
| pH | factor other than temperature that can affect the rate of enzyme controlled reactions |
| Optimum | condition in which the enzyme is most active |

N5 CB5 **Genetic Engineering** GLOSSARY ANSWERS

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| word / term | meaning |
| Genetic engineering | the transfer of genetic information from a cell of one type of organism to a cell of another type of organism. |
| bacterial cell | single celled organism often used in genetic engineering |
| chromosome | thread- like structure in nucleus where desired gene is found |
| plasmid | small circular structures that are found in bacterial cells and made of DNA |
| enzymes | chemicals used to cut out desired gene, cut open plasmid and seal gene into plasmid |
| GM | genetically modified |

N5 Biology CB6 Respiration GLOSSARY ANSWERS

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| word / term  | meaning |
| Respiration | a chemical reaction performed by all living cells. |
| function of respiration | to release the chemical energy stored in glucose |
| enzymes | chemicals that control the series of reactions in respiration |
| ATP | the useful product of respiration. |
| examples of uses of energy by cells | muscle contraction, protein synthesis, cell division transmission of electrical impulses along nerves. |
| glucose -> pyruvate | what happens in the first stage of respiration |
| cytoplasm | location of first stage of respiration |
| 2 ATP | yield of ATP from the first stage of respiration |
| pyruvate -> CO2 & water | what happens in the second stage of aerobic respiration |
| mitochondria | location of second stage of respiration |
| many ATPs (36) | yield of ATP from the second stage of aerobic respiration |
| fermentation | release of energy from glucose without oxygen |
| lactate | product of fermentation in animal cells |
| ethanol & CO2 | products of fermentation in plant cells |
| 2 ATPs | yield of ATP from fermentation |
| cytoplasm | location of fermentation reactions |