5 · Respiration, Internal Environment, Coordination and Gene Technology

Pearson Edexcel · International A-Level · Biology · Vocabulary in context

Word	Example
actin /'æktɪn/	**Actin** filaments slide past myosin during muscle contraction.
ADH /ˌeɪ diː 'eɪtʃ/	**ADH** makes the kidneys save water.
Adrenaline /ə'drenəlɪn/	**Adrenaline** helps prepare the body for rapid action.
all-or-nothing /ɔːl ɔː 'nʌθɪŋ/	**All-or-nothing** means each triggered action potential reaches its full size.
Auxin /'ɔːksɪn/	**Auxin** promotes cell elongation in this growing shoot.
Bioinformatics /ˌbaɪəʊɪnfɔː'mætɪks/	**Bioinformatics** uses computing to compare and analyse biological data.
Bowman's capsule /'bəʊmənz 'kæpsjuːl/	**Bowman's capsule** receives fluid filtered from the glomerular capillaries.
cerebellum /ˌserɪ'beləm/	The **cerebellum** coordinates balance and movement.
cerebral hemispheres /'serɪbrəl 'hemɪsfɪəz/	The **cerebral hemispheres** support conscious thought and voluntary movements.
collecting duct /kə'lektɪŋ dʌkt/	The **collecting duct** takes back more water when the body needs it.
deaminated /'diːmɪneɪtɪd/	Excess amino acids are **deaminated** in the liver.

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dopamine /'dɒpəmiːn/	**Dopamine** is a neurotransmitter involved in controlling movement.
Epigenetics /ˌepɪdʒɪ'netɪks/	**Epigenetics** studies how genes are switched on and off without changing the DNA. DNA
gibberellins /ˌdʒɪbə'relɪnz/	**Gibberellins** stimulate enzymes that release food reserves during germination.
Glycolysis /glaɪ'kɒləsɪs/	**Glycolysis** splits glucose into two pyruvates.
Habituation /ˌhæbɪtʃuː'eɪʃn/	**Habituation** reduces a response after repeated harmless stimulation.
Homeostasis /ˌhəʊmiːə'stɑːsɪs/	**Homeostasis** keeps internal conditions within a suitable range.
hypothalamus /ˌhaɪpəʊ'θæləməs/	The **hypothalamus** in the brain checks the water level of the blood.
insulin /'ɪnsjuːlɪn/	**Insulin** lowers the level of sugar in the blood.
Krebs cycle /krebz 'saɪkl/	The **Krebs cycle** releases carbon dioxide and forms reduced coenzymes.
lactate /'lækteɪt/	During hard exercise, muscles make **lactate** when oxygen runs short.
ligament /'lɪgəmənt/	A **ligament** joins bones and helps support a joint.
ligase /'lɪgeɪs/	**Ligase** joins pieces of DNA together. DNA
Link reaction /lɪŋk rɪ'ækʃn/	The **link reaction** converts pyruvate into acetyl coenzyme A. A

Word	Example
loop of Henle /luːp ɒv ˈhenl/	The **loop of Henle** helps establish the kidney medulla's concentration gradient.
medulla oblongata /ˈmedʌlə ˌɒblɒŋˈgɑːtə/	The **medulla oblongata** contains centres controlling heart rate and breathing.
methylation /ˌmeθɪˈleɪʃn/	DNA **methylation** can switch a gene off. DNA
Microarrays /ˈmaɪkrəʊəreɪz/	**Microarrays** use many probes to compare gene expression.
minute ventilation /ˈmɪnɪt ˌventɪˈleɪʃn/	**Minute ventilation** equals tidal volume multiplied by breathing rate.
myelinated /maɪˈelɪneɪtɪd/	**Myelinated** axons conduct impulses rapidly between exposed nodes.
myofibrils /ˈmaɪəfɪbrəlz/	**Myofibrils** contain the repeating units that shorten during muscle contraction.
myogenic /ˌmaɪəʊˈdʒenɪk/	Cardiac muscle is **myogenic**, so it can initiate its own contractions.
myosin /ˈmaɪəsɪn/	**Myosin** heads pull actin when the muscle's sliding mechanism operates.
Negative feedback /ˈnegətɪv ˈfiːdbæk/	**Negative feedback** brings conditions back to normal.
nephron /ˈnefrɒn/	Each kidney has about a million tiny tubes, each one a **nephron**.

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nociceptors /ˈnɒsaɪsptəz/	**Nociceptors** detect potentially damaging stimuli and trigger nervous signals.
Oxidative phosphorylation /ˈɒksɪdətɪv ˌfɒsfɔːrɪˈleɪʃn/	**Oxidative phosphorylation** couples electron transport to ATP production. ATP
oxygen debt /ˈɒksɪdʒn det/	You keep breathing hard after a race to repay the **oxygen debt**.
Phytochrome /ˈfaɪtəkrəʊm/	**Phytochrome** detects light conditions that help regulate plant development.
pituitary /pɪˈtjuːɪtəri/	The **pituitary** gland controls many other glands.
plasmid /ˈplæzmɪd/	A **plasmid** is a small ring of DNA in a bacterium. DNA
positive feedback /ˈpɒzɪtɪv ˈfiːdbæk/	Melting ice causes **positive feedback**: less ice means more heat, so more ice melts.
proximal convoluted tubule /ˈprɒksɪml ˌkɒnvəˈluːtɪd ˈtjuːbjuːl/	The **proximal convoluted tubule** takes back all the glucose into the blood.
Recombinant DNA /ˌriːˈkɒmbɪnənt ˌdiː en ˈeɪ/	**Recombinant DNA** combines genetic material from different sources. DNA
reflex arc /ˈriːfleks ɑːk/	A **reflex arc** goes from the receptor to the muscle without thinking.
refractory period /rɪˈfræktəri ˈpɪərɪəd/	During the **refractory period**, the neurone cannot fire again.
Respiratory quotient /rɪˈspɪrətəri ˈkwəʊʃənt/	The **respiratory quotient** compares carbon dioxide output with oxygen uptake.

Word	Example
restriction enzyme /rɪˈstrɪkʃn ˈenzaɪm/	A **restriction enzyme** cuts DNA at particular recognition sequences. DNA
saltatory conduction /ˈsɒltətəri kənˈdʌkʃn/	In **saltatory conduction**, the signal jumps along the nerve.
sino-atrial node /ˈsiːnəʊ ˈeɪtrɪəl nəʊd/	The **sino-atrial node** normally starts each heartbeat.
sodium-potassium pump /ˈsəʊdɪəm pəˈtæsɪəm pʌmp/	The **sodium-potassium pump** uses ATP to move ions. ATP
sticky ends /ˈstɪki endz/	**Sticky ends** help two pieces of DNA join. DNA
synapse /ˈsɪnæps/	A **synapse** is a small gap between two nerve cells.
tendon /ˈtendn/	A **tendon** joins a muscle to a bone.
threshold /ˈθreʃəʊld/	The alarm goes off above a **threshold** temperature.
transcription factor /trænˈskrɪpʃn ˈfæktə/	A **transcription factor** can switch a gene on.
urea /juːˈrɪə/	The liver makes **urea**.

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