

| The Brain              |                      |   |
|------------------------|----------------------|---|
| 1                      | Cerebral Cortex      | for consciousness, intelligence, memory, language   |
| 2                      | Medulla              | for unconscious activities (eg breathing, heartbeat)  |
| 3                      | Hypothalamus         | thermoregulatory Centre – controls temperature  |
| 4                      | Cerebellum           | for muscle co-ordination  |
| The Eye                |                      |   |
| 5                      | Retina               | contains light receptors  |
| 6                      | Lens                 | focuses the light on the retina   |
| 7                      | Optic nerve          | carries impulses from the eye to the brain  |
| 8                      | Sclera               | protects the eye  |
| 9                      | Cornea               | refracts light rays   |
| 10                     | Iris                 | regulates the amount of light entering the pupil  |
| 11                     | Ciliary muscles      | change the shape of the lens  |
| 12                     | Suspensory ligaments | hold the lens in place  |
| 13                     | Accommodation        | changing the shape of the lens to focus on near or distant objects                                |
| 14                     | a) Near objects      | ciliary muscles contract & suspensory muscles loosen<br>Lens is thicker so refracts more strongly |
| 15                     | b) Distant Objects   | ciliary muscles relax & suspensory muscles tighten<br>Lens is thinner so refracts only slightly   |
| 16                     | Myopia               | short sightedness   |
| 17                     | Hyperopia            | long sightedness  |
| 18                     | Laser Eye Surgery    | changes the shape of the cornea   |
| Temperature control    |                      |   |
| 19                     | Thermoregulation     | control of body temperature   |
| 20                     | If you are too hot   | vasodilation, sweating  |
| 21                     | If you are too cold  | vasoconstriction, shivering, stop sweating.   |
| Uses of plant hormones |                      |   |
| 22                     | Auxins uses          | weed killers, rooting powders, promoting tissue growth  |
| 23                     | Gibberellins uses    | end seed dormancy, promote flowering, increasing fruit size                                       |
| 24                     | Ethene use           | controls fruit ripening during storage and transport  |

| Water Balance  |  |   |
|----------------|--|---|
| 25             | How water leaves   | exhalation & sweating   |
| 26             | Kidneys  | remove excess water, ions and urea through urine  |
| 27             | If you lose too much water   | loss of function of body cells  |
| 28             | ADH  | hormone that controls water levels  |
| 29             |  | produced by pituitary gland   |
| 30             |  | acts on kidney tubules to cause more water to be re-absorbed back into the blood. (negative feedback) |
| 31             | Urea   | amino acids are deaminated in the liver to form ammonia. ammonia is toxic, so converted to urea.      |
| 32             | Kidney Dialysis  | used to treat kidney failure  |
| Plant Hormones |  |   |
| 33             | Auxins   | stimulate plant cells to elongate   |
| 34             | Gibberellins   | initiate germination of seeds   |
| 35             | Ethene   | controls cell division & ripening of fruit  |
| 36             | Phototropism   | plant response to light   |
| 37             | Geotropism   | plant response to gravity   |
| <b>38</b>      | <b>Required Practical: Plant Responses</b>                         |   |
| A              | Independent Variable   | angle of light or gravity   |
| B              | Dependent Variable   | length of seedlings   |
| C              | Control Variables  | seed variety, soil type, temperature, water.  |
| D              | Method: Plant Responses  |   |
|                | i) allow 10 seedlings to germinate in 3 dishes                     |   |
|                | ii) place each tray in different conditions (eg partial light etc) |   |
|                | iii) every day for 1 week record the length of seedlings           |   |
|                | iv) provide each one with the same amount of water each day.       |   |
|                | v) calculate a mean for each condition & compare.                  |   |

| Reproduction |                                       |   |
|--------------|---------------------------------------|---|
| 1            | Pros and cons of sexual reproduction  | + variation, disease less likely<br>- time and energy needed to find a mate   |
| 2            | Pros and cons of asexual reproduction | + less energy spent finding mates, can produce large quantities of offspring<br>- No variation can lead to disease affecting all. |
| 3            | DNA Structure                         | made up of nucleotides that consist of a sugar, phosphate and base  |
| 4            | Base pair rules                       | A-T<br>C-G  |
| Inheritance  |                                       |   |
| 5            | Gregor Mendel                         | carried out experiments on pea plants to look at inheritance patterns.  |

| Making proteins |                                   |   |
|-----------------|-----------------------------------|---|
| 6               | Amino acid                        | building blocks of proteins   |
| 7               | AQA Biology Only                  | Unit 7: Ecology   |
|                 | synthesis                         | ribosomes of the cell   |
| 8               | The sequence of protein synthesis | <b>Stage 1 – In the nucleus</b><br>DNA unzips and a single strand copy is made<br><b>Stage 2 – In the ribosome</b><br>copy travels to the ribosome<br>every 3 bases codes for an amino acid<br>the amino acids bond together to form a protein. |
| 9               | Ribosome                          | the site of protein synthesis   |
| 10              | Mutation                          | change in the DNA sequence can change the protein being made  |

| Evolution |                       |   |
|-----------|-----------------------|---|
| 11        | Charles Darwin        | scientist who outlined his theory of evolution  |
| 12        | Jean-Baptiste Lamarck | theory of evolution based on characteristics improving due to use, this idea has been discredited |
| 13        | Wallace               | did much of the pioneering work on speciation   |
| 14        | Speciation            | the formation of new species  |

| Artificial processes |                              |  |
|----------------------|------------------------------|--|
| 15                   | Cloning                      | genetically identical copies are made of animals or plants   |
| 16                   | Adult cell cloning key steps | i) nucleus is removed from an unfertilised egg cell<br>ii) the nucleus from an adult body cell is inserted into the egg cell<br>iii) electric shock causes the egg cell to divide to form<br>iv) inserted into the womb of an adult female |
| 17                   | Cuttings                     | taking a cutting from a plant to produce identical offspring   |
| 18                   | Tissue culture               | uses small groups of cells from part of a plant to grow a new plant  |

| Organisation of an ecosystem |   |   |
|------------------------------|---|---|
| 1                            | Decomposition   | breaking down material  |
| 2                            | <b>RP – measure the effect of temperature on the rate of decay of fresh milk by measuring pH change</b> |   |
| A                            | Independent variable  | temperature of milk   |
| B                            | Dependent variable  | time taken for pH to change (time taken to decay)   |
| C                            | Control variable  | type of milk, volume of milk  |
| D                            | Method  | i. place chosen volume of fresh milk into three beakers<br>ii. use universal indicator to determine the pH<br>iii. incubate each beaker at a different temperature<br>iv. use universal indicator to determine the pH of the milk after 24, 48 and 72 hours |
| Trophic levels               |   |   |
| 3                            | Trophic level   | the position of an organism in a food chain, food web or pyramid  |
| 4                            | Biomass   | the dry mass of an organism   |
| 5                            | Pyramid of biomass  | represents the relative biomass at each trophic level   |
| 6                            | Apex predator   | the final level of the food chain   |
| 7                            | Causes of biomass loss  | - not all ingested material is absorbed<br>- some absorbed material is lost as waste  |
| 8                            | Efficiency of biomass transfer  | = (biomass / biomass at previous level) x 100   |

| Food production |   |   |
|-----------------|---|---|
| 9               | Food security                               | having enough food to feed a population   |
| 10              | Factors which are threatening food security | - increasing population<br>- change in diet<br>- new pathogens/pests,<br>- environmental changes, conflicts |
| 11              | Sustainable fisheries                       | control of net size and fishing limits help with sustainable fishing  |
| 12              | Biotechnology                               | the use of <b>selective breeding</b> and <b>genetic modification</b> techniques in farming                  |