

Biology

Unit 1 – Paper 1

- 1. Cell structure and transport**
(microscopes, animal and plant cells, eukaryotic and prokaryotic cells, specialisation in cells, diffusion, osmosis, osmosis in plants, active transport, exchanging materials)
- 2. Cell division**
(mitosis, growth and differentiation, stem cells)
- 3. Organisation and the digestive system**
(tissues and organs, human digestive system, chemistry of food, catalysts and enzymes, factors affecting enzyme action, digestion, making digestion efficient)
- 4. Organising Animals and plants**
(blood, blood vessels, heart, helping the heart, breathing and gas exchange, tissues and organs in plants, transport systems in plants, evaporation and transpiration)
- 5. Communicable diseases**
(pathogens, disease, *growing and preventing bacteria*, preventing infections, viruses, bacteria, fungi, white blood cells, *plant disease and response*)
- 6. Preventing and treating disease**
(vaccination, antibiotics, discovering and developing drugs, *monoclonal antibodies*)
- 7. Non-communicable diseases**
(non-communicable diseases, cancer, smoking, diet, alcohol and carcinogens)
- 8. Photosynthesis**
(photosynthesis, uses of glucose, **making the most of photosynthesis**)
- 9. Respiration**
(aerobic, exercise, anaerobic, metabolism and the liver)

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- 10. The human nervous system**
(principles of homeostasis, structure and function of nervous system, reflex actions, *brain, eye and problems*)
- 11. Hormonal coordination**
(homeostasis, nervous system, diabetes, **negative feedback**, human reproduction, **menstrual cycle**, artificial control of fertility, **infertility treatments**, plant hormones)
- 12. Homeostasis in action**
(*Controlling body temperature, removing waste products, human kidney, dialysis, kidney transplants*)
- 13. Reproduction**
(types of reproduction, meiosis, *advantages/disadvantages of sexual and asexual reproduction*, DNA and the genome, *protein synthesis, gene expression and mutation*, inheritance, inherited disorders, screening)
- 14. Variation and Evolution**
(variation, natural selection, selective breeding, genetic engineering, *cloning, adult cell cloning*, ethics)
- 15. Genetics and evolution**
(*genetics, evolution, Darwin, speciation*, evidence, extinction, antibiotic resistant bacteria, classification)
- 16. Adaptations, interdependence and competition**
(communities, distribution and abundance, competition, adaptations)
- 17. Organising an ecosystem**
(*feeding relationships*, materials cycling, carbon cycle, *rates of decomposition*)
- 18. Biodiversity and ecosystems**
(population explosion, land and water pollution, air pollution, deforestation and peat destruction, global warming, maintaining biodiversity, *trophic levels, biomass, food security, food production efficiency, sustainable food production*)

Key:

In colour: Separate science only

In bold: Higher only