Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**GCSE Science**

**10-minute quizzes**

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**Biology Paper 1**

**Quiz 1: Cell Biology**

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| 1. **True or False? “All plant cells lose the ability to differentiate at an early stage”.**

A – TrueB – False | 1. **Which of these organelles are not found in a bacterial cell?**

A – NucleusB – Cell membraneC – Cell wall |
| 1. **Diffusion is where particles spread out from…**

A - …an area of lower concentration to an area of higher concentration.B - …an area of higher concentration to an area of low concentration. | 1. **When using a light microscope to view a slide, which lens should be selected to start with?**

A – Lowest powered objective lensB – Highest powered objective lens |
| 1. **True or False? “In human body cells, chromosomes usually come in pairs”.**

A – TrueB - False | 1. **If the concentration of water inside a cell is lower than outside the cell, what will the net movement of water molecules be?**

A – Into the cell.B – Out of the cell. |
| 1. **Which of these characteristics makes the alveoli efficient at gas exchange?**

A – They have thick walls.B – They have a large surface area.C – They don’t have a good blood supply.  | 1. **What happens inside a cell before mitosis takes place?**

A – The number of subcellular structures it has increases.B – One set of chromosomes is pulled to each end of the cell.C – The cell membrane divides.  |

1. **Explain one way in which a nerve cell is adapted to carry out its specialised function. (1)**

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1. **What is a stem cell? (2)**

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1. **Complete the diagram of the animal cell. (4)**

**Describe the roles of the following parts of the cell:**

**Mitochondria: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Nucleus: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Quiz 2: Organisation**

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| 1. **What is a tissue?**

A – A collection of different types of cell that work together.B – A collection of similar cells that work together.  | 1. **What colour is iodine solution in the presence of starch?**

A – Blue-blackB – Brown-orangeC – Brick-red |
| 1. **Where is bile produced and stored?**

A – Produced in the liver and stored in the gall bladder.B – Produced in the gall bladder and stored in the stomach. C – Produced in the stomach and stored in the pancreas.  | 1. **True or False? “People who have problems with their immune system have an increase chance of summering from communicable diseases”.**

A – TrueB – False  |
| 1. **Which type of tumour is cancerous?**

A – BenignB - Malignant | 1. **Which of these is NOT a chamber of the heart?**

A – Left ventricleB – Right atrium.C- Vena Cava |
| 1. **Which of these aren’t features of arteries?**

A – Elastic fibresB – Thick walls.C – Valves.  | 1. **What is the function of palisade mesophyll tissue?**

A – It covers the surface of the plant.B – It’s where photosynthesis happens.C – It carries substances around a plant.  |

1. **What is the role of protease enzymes? (1)**

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1. **Describe the function of phloem tissue. (1)**

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1. **Give two components of the blood that are carried in the blood plasma. (2)**
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3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. **Describe what happens to an enzyme If the temperature is too high (3)**

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**Quiz 3: Organisation**

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| 1. **True or False? “Organ systems work together to form organs.”**

A – TrueB – False  | 1. **What artificial device can be used to keep arteries open and blood flowing?**

A – A ventilatorB – A valveC – A stent |
| 1. **When breathing in, which structure(s) does air enter first?**

A – AlveoliB – TracheaC – Bronchi  | 1. **What is the function of white blood cells?**

A – They deliver nutrients around the body.B – They transport deoxygenated blood around the body.C – They defend the body against microorganisms.  |
| 1. **Why is the shape of an enzyme important for its function?**

A – So it can squeeze through small gaps.B – So that it can enter the cells of the body.C – So that it fits the substance involved in the reaction it is catalysing.  | 1. **What is the name of the cells that control the opening and closing of the stomata?**

A – Palisade cellsB – Guard cellsC- Meristem cells  |
| 1. **True or False? “Blood flows to the organs through the veins.”**

A – TrueB – False  | 1. **Which of the following would you use to test for the presence of protein?**

A – Biuret solutionB – Benedict’s solutionC – Iodine solution.  |

1. **Give one advantage of using an artificial heart rather than transplanting a natural one. (1)**

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1. **Give one risk factor that can increase a person’s chance of developing liver disease. (1)**

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1. **Describe what a benign tumour is. (1)**

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1. **Explain how increasing air movement around a plant’s eaves would affect the rate of transpiration. (4)**

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**Quiz 4: Infection and Response**

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| 1. **What is the first stage of testing a new medicinal drug?**

A – The drug is tested on human cells and tissues in the lab.B – The drug is tested on human volunteers in a clinical trial.  | 1. **How does the stomach help to defend the body against pathogens?**

A – It secretes hydrochloric acid to kill pathogensB – It contains hairs to trap pathogensC – It secretes antibodies to kill pathogens |
| 1. **What’s a microorganism that causes disease called?**

A – An antibodyB – An antitoxinC – A pathogen | 1. **Which type of pathogen causes rose black spot on leaves?**

A – FungusB – BacteriumC - Virus  |
| 1. **Which drug was developed by Alexander Fleming?**

A – PenicillinB – DigitalisC - Aspirin | 1. **Gonorrhoea is a disease caused by…**

A – …protists.B - …viruses.C- …bacteria.  |
| 1. **True or False? “Antibiotics can kill viruses.”**

A – TrueB – False  | 1. **Which type of drugs are used to control HIV?**

A – AntibioticsB – AntiretroviralsC – Painkillers.  |

1. **Explain why the tobacco mosaic virus (TMV) affects the growth of plants. (2)**

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1. **Explain how mosquito nets help to prevent the spread of malaria. (2)**

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1. **Explain how vaccination can protect against a disease. (3)**

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**Quiz 5: Infection and Response**

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| 1. **What is penicillin?**

A – An antibioticB – An anti-viral drugC – A painkiller | 1. **True or False? “For a large outbreak of an infectious disease to be prevented, everyone must be vaccinated against it.”**

A – TrueB – False  |
| 1. **Which disease in humans can be partly controlled by vaccinating poultry against the pathogen?**

A – Salmonella food poisoningB – GonorrhoeaC - Measles | 1. **Which type of the following diseases is not spread by sexual contact?**

A – HIVB – GonorrhoeaC - Measles |
| 1. **What do white blood cells produce to help defend against pathogens?**

A – AntigensB – AntibioticsC - Antibodies | 1. **Which of the following diseases is caused by a protist?**

A – MeaslesB – MalariaC - HIV |
| 1. **Which of these statements about bacteria is false?**

A – Bacteria damage cells by living and replicating inside them.B – Some bacteria reproduce quickly in the body.C – Bacteria can produce toxins.  | 1. **True or False? “Preclinical trials help to find the optimum dose for a drug”.**

A – TrueB – False  |

1. **How do viruses make you feel ill? (2)**

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1. **How does the nose help to defend the body against disease? (2)**

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1. **What is a double-blind trial and why is it used for clinical trials? (3)**

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**Quiz 13: Homeostasis and Response**

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| 1. **When a woman has a low level of FSH, her…**

A – …uterus lining is not maintained.B - …eggs do not mature.C - …mature eggs are not stimulated to release. | 1. **How many days does the menstrual cycle usually last for?**

A – 52 daysB – 7 daysC – 28 days |
| 1. **Reaction time is the time it takes for someone to…**

A – …detect a stimulusB – …respond to a stimulusC - …remember something.  | 1. **Which of the following is an example of a coordination centre?**

A – SkinB – PancreasC - Muscle  |
| 1. **Which of the following is a barrier method of contraception?**

A – DiaphragmB – Contraceptive patchC – Intrauterine device | 1. **The gland which releases thyroxine is…**

A - …the pituitary glandB - …the adrenal glandC - …the thyroid gland |
| 1. **Which is the central nervous system made up of?**

A – The brain and receptorsB – The brain and spinal cordC – The spinal cord and receptors  | 1. **Which is the correct pathway for stimuli along the reflex arc?**

A – Relay neurone 🡪 sensory neurone🡪 motor neurone.B – Sensory neurone 🡪motor neurone 🡪relay neurone.C- Sensory neurone🡪 relay neurone🡪 Motor neurone |

1. **Give two roles that thyroxine has in the body. (2)**
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
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4. **Explain what Type 1 diabetes is, and why is it dangerous. (2) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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1. **List three internal conditions that your body needs to keep constant to survive. (3)**
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
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**Quiz 14: Homeostasis and Response**

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| 1. **What is the hormone that controls the ‘fight or flight’ response?**

A – ThyroxineB – AdrenalineC - Glucagon | 1. **True or False? “Caffeine can affect a person’s reaction time”.**

A – TrueB - False |
| 1. **The contraceptive implant continuously releases progesterone, which…**

A – …stimulates the production of FSH.B – …stops the ovaries releasing eggs.C - …acts as a spermicidal agent.  | 1. **In the menstrual cycle, what effect does the release of oestrogen have on LH and FSH?**

A – It stimulates the release of LH and FSH.B – It inhibits the release of LH and stimulates the release of FSH.C – It stimulates the release of LH and inhibits the release of FSH.  |
| 1. **Where in the body would you find the adrenal gland?**

A – NeckB – BrainC – Just above the kidneys.  | 1. **True or False? “The blood sugar level of someone with Type 1 diabetes is always dangerously low”.**

A – TrueB - False |
| 1. **What is secreted by the pancreas when blood glucose levels fall?**

A – GlucoseB – InsulinC - Glucagon | 1. **True or False? “Hormones have longer-lasting effects than nervous impulses”.**

A – TrueB - False |

1. **What is the role of LH in the menstrual cycle? (1)**

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1. **What type of neurone transmits impulses to an effector in the nervous system? (3)**

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**Give an example of an effector and describe how it responds to a stimulus.**

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1. **What is meant by the term homeostasis? (3)**

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**Quiz 15: Inheritance, Variation and Evolution**

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| 1. **True or False? “Selective breeding can happen without human intervention”.**

A – TrueB - False | 1. **What effect do mutations have on variation?**

A – They decrease it.B – They increase it.C – There is no effect.  |
| 1. **When an individual has one dominant and one recessive allele…**

A – …the recessive allele is expressed. B – …both alleles are expressed.C - …the dominant allele is expressed.  | 1. **True or False? “Fossils can be formed from an organisms footprints and burrows that have been preserved over time”.**

A – TrueB - False |
| 1. **How many chromosomes does a human gamete have?**

A – 46B – 12C – 23  | 1. **What sex chromosomes does someone who is biologically male have?**

A – XYB – XXXC - XX |
| 1. **What is the main idea behind Darwin’s theory of evolution by natural selection?**

A – There is variation in a population. Those more suited to the environment will be more likely to survive and pass on their characteristics.B – individuals develop characteristics during their lifetimes, which make them more suited to their environment. They pass these onto their offspring.  | 1. **How are genes ‘cut out’ from chromosomes in genetic engineering?**

A – Using enzymesB – Using bacteriaC – Using a knife  |

1. **What is a fossil? (1)**

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1. **Give two pieces of evidence that support Darwin’s theory of evolution. (2)**
2. **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
3. **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
4. **Suggest two reasons why someone may be against embryonic screening. (2)**
5. **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
6. **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
7. **Briefly describe the role of a vector in genetic engineering and give one example of a vector used. (2) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Quiz 16: Inheritance, Variation and Evolution**

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| 1. **True or False? “The alleles for cystic fibrosis and polydactyly are both dominant”.**

A – TrueB - False | 1. **If a farmer wants to increase the meat yield of his cows, he would breed together…**

A – …the biggest cows.B - …those that produced the most milk.C - …those with a gentle temperament.  |
| 1. **What is an organism’s genotype?**

A – The characteristics that the organism has.B – The alleles that the organism has.  | 1. **How often do mutations result in a new phenotype?**

A – AlwaysB – OftenC – Very rarely.  |
| 1. **What do evolutionary trees show?**

A – Evolutionary relationshipsB – Parental relationshipsC – Genetic disorders  | 1. **What is a problem that could result from patients not finishing a course of antibiotics?**

A – Antibiotic resistance increases in bacteria.B – Antibiotic resistance increases in viruses.C – Immunity to disease increases in humans.  |
| 1. **How many cell divisions occur during meiosis?**

A – 1B – 2C - 4 | 1. **What is the correct order of classification groups?**

A – Kingdom, genus, class, order, family, phylum, species.B – Family, phylum, species, order, kingdom, genus, class.C – Kingdom, phylum, class, order, family, genus, species.  |

1. **A tall pea plant with two dominant ‘T’ alleles and a dwarf pea plant with two recessive ‘t’ alleles are crossed to produce a pea plant with the genotype Tt. What will the new plant’s phenotype be? Explain your answer. (2)**

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1. **The diagram shows a simple evolutionary tree. Use it to describe how the whale and shark are related in terms of distant and recent ancestors. (2)**

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1. **Explain how sexual reproduction produces variation. (3) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**