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

**GCSE Science**

**10-minute quizzes**

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**Biology Paper 1**

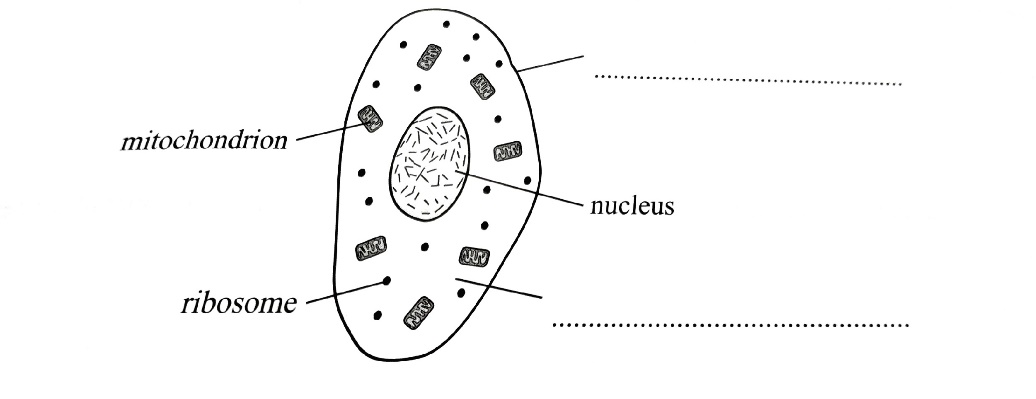
**Quiz 1: Cell Biology**

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| 1. **True or False? “All plant cells lose the ability to differentiate at an early stage”.**   A – True  B – False | 1. **Which of these organelles are not found in a bacterial cell?**   A – Nucleus  B – Cell membrane  C – 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 lens  B – Highest powered objective lens |
| 1. **True or False? “In human body cells, chromosomes usually come in pairs”.**   A – True  B - 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-black  B – Brown-orange  C – 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 – True  B – False |
| 1. **Which type of tumour is cancerous?**   A – Benign  B - Malignant | 1. **Which of these is NOT a chamber of the heart?**   A – Left ventricle  B – Right atrium.  C- Vena Cava |
| 1. **Which of these aren’t features of arteries?**   A – Elastic fibres  B – 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 – True  B – False | 1. **What artificial device can be used to keep arteries open and blood flowing?**   A – A ventilator  B – A valve  C – A stent |
| 1. **When breathing in, which structure(s) does air enter first?**   A – Alveoli  B – Trachea  C – 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 cells  B – Guard cells  C- Meristem cells |
| 1. **True or False? “Blood flows to the organs through the veins.”**   A – True  B – False | 1. **Which of the following would you use to test for the presence of protein?**   A – Biuret solution  B – Benedict’s solution  C – 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 pathogens  B – It contains hairs to trap pathogens  C – It secretes antibodies to kill pathogens |
| 1. **What’s a microorganism that causes disease called?**   A – An antibody  B – An antitoxin  C – A pathogen | 1. **Which type of pathogen causes rose black spot on leaves?**   A – Fungus  B – Bacterium  C - Virus |
| 1. **Which drug was developed by Alexander Fleming?**   A – Penicillin  B – Digitalis  C - Aspirin | 1. **Gonorrhoea is a disease caused by…**   A – …protists.  B - …viruses.  C- …bacteria. |
| 1. **True or False? “Antibiotics can kill viruses.”**   A – True  B – False | 1. **Which type of drugs are used to control HIV?**   A – Antibiotics  B – Antiretrovirals  C – 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 antibiotic  B – An anti-viral drug  C – A painkiller | 1. **True or False? “For a large outbreak of an infectious disease to be prevented, everyone must be vaccinated against it.”**   A – True  B – False |
| 1. **Which disease in humans can be partly controlled by vaccinating poultry against the pathogen?**   A – Salmonella food poisoning  B – Gonorrhoea  C - Measles | 1. **Which type of the following diseases is not spread by sexual contact?**   A – HIV  B – Gonorrhoea  C - Measles |
| 1. **What do white blood cells produce to help defend against pathogens?**   A – Antigens  B – Antibiotics  C - Antibodies | 1. **Which of the following diseases is caused by a protist?**   A – Measles  B – Malaria  C - 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 – True  B – 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 days  B – 7 days  C – 28 days |
| 1. **Reaction time is the time it takes for someone to…**   A – …detect a stimulus  B – …respond to a stimulus  C - …remember something. | 1. **Which of the following is an example of a coordination centre?**   A – Skin  B – Pancreas  C - Muscle |
| 1. **Which of the following is a barrier method of contraception?**   A – Diaphragm  B – Contraceptive patch  C – Intrauterine device | 1. **The gland which releases thyroxine is…**   A - …the pituitary gland  B - …the adrenal gland  C - …the thyroid gland |
| 1. **Which is the central nervous system made up of?**   A – The brain and receptors  B – The brain and spinal cord  C – 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 – Thyroxine  B – Adrenaline  C - Glucagon | 1. **True or False? “Caffeine can affect a person’s reaction time”.**   A – True  B - 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 – Neck  B – Brain  C – Just above the kidneys. | 1. **True or False? “The blood sugar level of someone with Type 1 diabetes is always dangerously low”.**   A – True  B - False |
| 1. **What is secreted by the pancreas when blood glucose levels fall?**   A – Glucose  B – Insulin  C - Glucagon | 1. **True or False? “Hormones have longer-lasting effects than nervous impulses”.**   A – True  B - 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 – True  B - 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 – True  B - False |
| 1. **How many chromosomes does a human gamete have?**   A – 46  B – 12  C – 23 | 1. **What sex chromosomes does someone who is biologically male have?**   A – XY  B – XXX  C - 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 enzymes  B – Using bacteria  C – Using a knife |

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

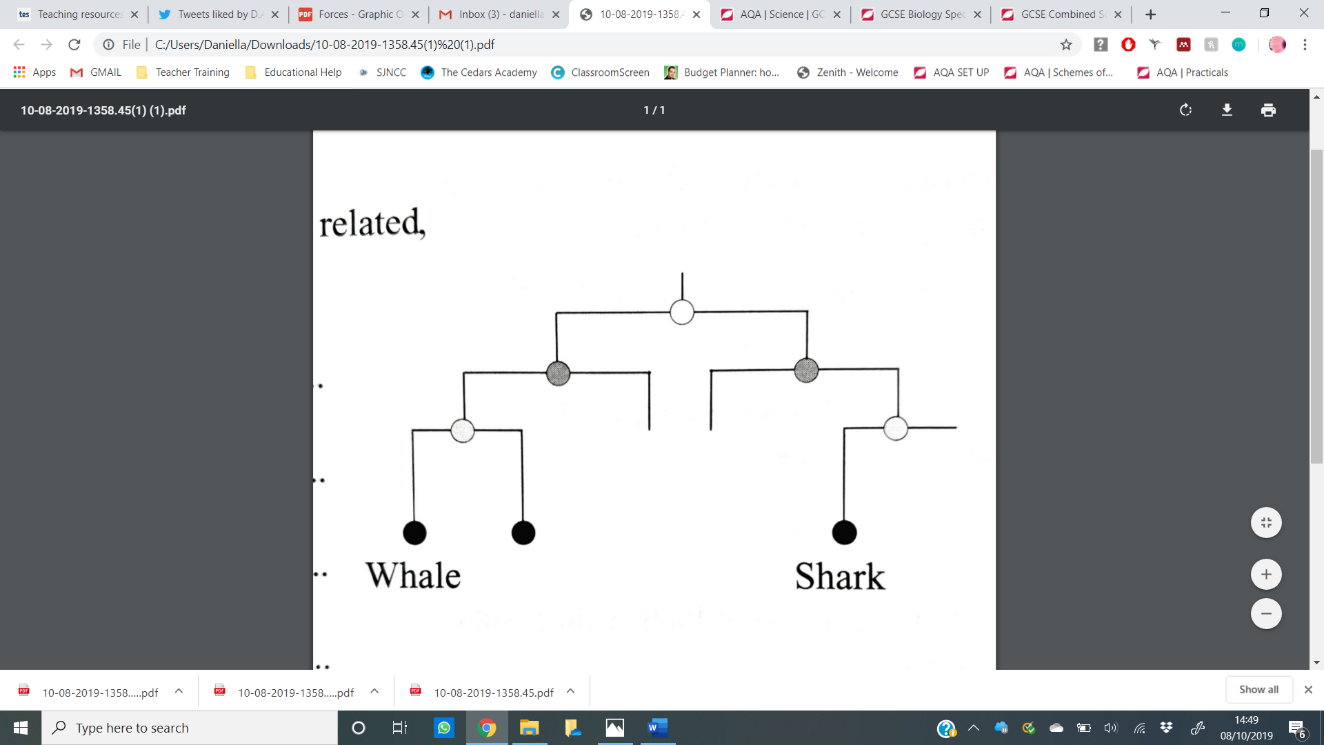
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1. **Give two pieces of evidence that support Darwin’s theory of evolution. (2)**
2. **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
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 – True  B - 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 – Always  B – Often  C – Very rarely. |
| 1. **What do evolutionary trees show?**   A – Evolutionary relationships  B – Parental relationships  C – 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 – 1  B – 2  C - 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) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**