

B1 Quick Revision Questions

Question 1

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- Name the 4 components that are found in an
Animal Cell

Answer 1

.... of 50

- Nucleus, Mitochondria, Cell Membrane & Cytoplasm.

Question 2

.... of 50

- Name the other components found in Plant Cells

Answer 2

.... of 50

- Nucleus, Mitochondria, Cell Membrane & Cytoplasm.

Question 3

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- What is the equation for Magnification

Answer 3

.... of 50

- Total Magnification = Magnification of eyepiece x magnification of objective lens

Question 4

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- Explain why the magnification of a cell in a book is important but not when viewing a cell on a website?

Answer 4

.... of 50

- Computer's can zoom in on a cell which makes the magnification useless whereas in a call, the magnification can not be changed

Question 5

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- What 2 cells are known as Eukaryotic Cells

Answer 5

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- Plant and Animal Cells

Question 6

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- What are the differences between Prokaryotic & Eukaryotic Cells

Answer 6

.... of 50

- Chromosomes instead of Nucleus
- Has a Flagellum for movement

Question 7

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- What are the 3 classifications of living organisms

Answer 7

.... of 50

- Bacteria
- Archaea
- Eukaryota

Question 8

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- Who created the classification system in 1977?

Answer 8

.... of 50

- Carl Woese

Question 9

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- How many chromosomes are found in Humans

Answer 9

.... of 50

- 46 (23 Pairs)

Question 10

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- When the chromosomes are organised in a Karyotype, how are they organised?

Answer 10

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- In size

Question 11

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- When a cell divides into two, what is it called?

Answer 11

.... of 50

- Mitosis

Question 12

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- What are the new cells formed called?

Answer 12

.... of 50

- Daughter cells

Question 13

.... of 50

- True or False
- When a cell divides into two, is it genetically identical to its previous cell?

Answer 13

.... of 50

- True

Question 14

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- Suggest why a baby's cell will be performing mitosis more than an Adult's cell

Answer 14

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- A baby will be growing much quicker than an adult which means it requires more cells in order for this to happen

Question 15

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- In what ways has a sperm cell adapted to its function?

Answer 15

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- A tail that allows it to swim
- A hard, pointed head to penetrate the egg
- Only has 23 chromosomes
- Acrosome containing digestive enzymes
- Many mitochondria to provide energy
- Streamlined shape

Question 16

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- Arrange the following in ascending order of size:

System

Cell

Human body

Organ

Tissue

Answer 16

.... of 50

- Human body
- System
- Organ
- Tissue
- Cell

Question 17

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- How is a nerve cell adapted to its function?

Answer 17

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- Extensions on cell body to connect with other nerve cells
- Long length – to pass information over long distances
- Myelin sheath – to make it quicker and to provide insulation

Question 18

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- What are the 2 types of tumour called?

Answer 18

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- Benign
- Malignant

Question 19

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- Explain why a tumour needs a blood supply

Answer 19

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- Blood supply is needed to give the tumour food and oxygen.

Question 20

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- What is the name of the process by which cells acquire certain features for a specific function?

Answer 20

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Differentiation

Question 21

.... of 50

- What is the names for the chemicals that cause cancer?

Answer 21

.... of 50

Carcinogens

Question 22

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- What is the name for a sudden change in the DNA?

Answer 22

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- Mutation

Question 23

.... of 50

- What are the other agents that can cause cancer?

Answer 23

.... of 50

- Viruses
- Chemicals in the home, industry or environment
- Ionising radiation
- Ultraviolet radiation
- Lifestyle choices e.g. Alcohol and diet

Question 24

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- What is a stem cell?

Answer 24

.... of 50

- Unspecialised cells that can make many different types of cell

Question 25

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- What is the function of an adult stem cell?

Answer 25

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- To replace body cells that die through injury or disease. Making only the type of tissue where they are found e.g. Blood, muscle.

Question 26

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- Which type of stem cells can differentiate into many cell types

Answer 26

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- Embryonic stem cells

Question 27

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- What can stem cell transplants be used to treat?

Answer 27

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- Injuries leading to paralysis
- Conditions in which body cells degenerate
- Cancer or following cancer treatment

Question 27

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- What can stem cell transplants be used to treat?

Answer 27

.... of 50

- Injuries leading to paralysis
- Conditions in which body cells degenerate e.g. Alzheimer's, diabetes and MS
- Cancer or following cancer treatment

Question 28

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- What is the law relating to stem cell use in Britain?

Answer 28

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- Embryos can now be created for scientific research

Question 29

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- What is meant by a moral and an ethical question?

Answer 29

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- Moral – whether something is right or wrong
- Ethical – the reasons why it might be right or wrong.

Question 30

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- Why must stem cells be a close match to the patient?

Answer 30

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- Avoids rejection and less use of immunosuppressant drugs

Question 31

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- What is therapeutic cloning?

Answer 31

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- Producing stem cells with the same genes as the patient.

Question 32

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- Describe the steps in therapeutic cloning?

Answer 32

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- Nucleus is removed from an egg cell
- Nucleus is removed from the cell of the patient
- This nucleus is placed in the empty egg cell
- Cell is stimulated to divide
- The embryo is grown
- Stem cells from the embryo are cultured

Question 33

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- What is the name for respiration with oxygen?

Answer 33

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- Aerobic respiration

Question 34

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- What is the word equation for aerobic respiration?

Answer 34

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- Oxygen + glucose \longrightarrow carbon dioxide + water

Question 35

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- What type of reaction is aerobic respiration?

Answer 35

.... of 50

- Exothermic

Question 36

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- Where does aerobic respiration take place?

Answer 36

.... of 50

- Mitochondria

Question 37

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- What is the name for respiration without oxygen?

Answer 37

.... of 50

- Anerobic respiration

Question 38

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- What is the word equation for anaerobic respiration in animals and in yeast?

Answer 38

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- Animals - Glucose \longrightarrow lactic acid
- Yeast – glucose \longrightarrow ethanol + carbon dioxide

Question 39

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- What is another name for anaerobic respiration in yeast?

Answer 39

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- Fermentation

Question 40

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- What is oxygen debt?

Answer 40

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- The amount of oxygen needed to break down lactic acid after exercise

Question 41

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- What is the problem with a build up of lactic acid?

Answer 41

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- Muscle fatigue/cramp

Question 42

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- Why is aerobic respiration more efficient than anaerobic respiration?

Answer 42

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- Much more energy is produced in aerobic respiration for each glucose molecule respired.

Question 43

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Separate science only

What is an aseptic technique?

Answer 43

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- A technique which ensures there is no contamination and everything is sterile

Question 44

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- **Separate science only**
- What is the term used when bacteria reproduce?

Answer 44

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- Binary fission

Question 45

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- **Separate science only**
- On a growth curve what is the lag phase, exponential growth phase, stationary phase and death phase?

- lag phase – no reproduction but growth of proteins/DNA cell
- exponential growth phase – rapid growth using available food
- stationary phase – death rate = growth rate as food is being used up
- and death phase – death rate increases as toxins build up in the culture

Question 46

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- **Separate science only**
- How would you measure the sensitivity of bacteria to antibiotics

Answer 46

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- The larger the clear area around the antibiotic the more effective it is.

Question 47

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- **Separate science only**
- What temperature are agar plates incubated at?

Answer 47

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- In industry at 37 °C but in the lab at 25 °C to avoid growing pathogens.

Question 48

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- Separate science only
 - What is MRSA?

Answer 48

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- A multi resistant bacterium.

Question 49

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- **Separate science only**
- What is an antiseptic?

Answer 49

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- A chemical that destroys bacteria outside the body

Question 50

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- **Separate science only**
- Explain how you would inoculate an agar plate

Answer 50

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- Flame the loop to kill bacteria
- Take a loop of the sample
- Open the petri dish away from your face
- Carefully streak the plate
- Avoid damaging the surface
- Flame the loop to sterilise it
- Sellotape two points on the petri dish