

# B3 Quick Revision Questions

# Question 1

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- What is osmosis?

# Answer 1

.... of 50

- Osmosis is the diffusion of water through a partially permeable membrane, down a concentration gradient.

# Question 2

.... of 50

- What does partially permeable membrane mean?

# Answer 2

.... of 50

- A membrane that allows some small molecules to pass through but not larger molecules.

# Question 3

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- What has happened if a plant cell becomes turgid?

# Answer 3

.... of 50

- The vacuole has filled with water and pushes against the cell wall.

# Question 4

.... of 50

- What has happened if a plant cell is flaccid?



# Answer 4

.... of 50

- Water has moved out of the cell by osmosis and the vacuole shrinks.

# Question 5

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- What is active transport?

# Answer 5

.... of 50

- Active transport is when a cell uses energy to transport substances through cell membranes against a concentration gradient.

# Question 6

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- How do you work out the surface area to volume ratio?

# Answer 6

.... of 50

- Surface area divided by the volume

# Question 7

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- Name two features that an efficient exchange surface should have.

# Answer 7

.... of 50

- A large surface area
- A thin membrane

# Question 8

.... of 50

- What does an enzyme do?



# Answer 8

.... of 50

- Catalyse chemical reactions that happen in cells

# Question 9

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- Describe the 3 stages of the lock-and-key theory

# Answer 9

.... of 50

- Substrate binds enzyme's active site
- Enzyme-substrate complex forms
- Enzyme releases products

# Question 10

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- What are enzyme controlled reactions affected by?

# Answer 10

.... of 50

- pH
- Temperature

# Question 11

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- In terms of experiments, define repeatable and reproducible

# Answer 11

.... of 50

- Repeatable – if you repeat the investigation using the same method and equipment and obtain the same results
- Reproducible – if the investigation is repeated by someone else or with different equipment or methods and the results are the same

# Question 12

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- Name four parts of the digestive system



# Answer 12

.... of 50

- Salivary gland
- Oesophagus
- Stomach
- Liver
- Gall bladder
- Small intestine
- Large intestine
- Anus

# Question 13

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- What are fatty acids used for?

# Answer 13

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- For energy
- For building cell membranes
- To make hormones

# Question 14

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- Why is physical digestion important?

# Answer 14

.... of 50

- It allows food to pass through the digestive system more easily

# Question 15

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- What do carbohydrases do? Give an example

# Answer 15

.... of 50

- Break down carbohydrates into simple sugars
- E.g. amylase breaks down starch

# Question 16

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- Where are proteases found?



# Answer 16

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- In the stomach, pancreas and small intestine

# Question 17

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- What is the role of bile?

# Answer 17

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To emulsify fat droplets to increase their surface area to speed up their digestion by lipase enzymes

# Question 18

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- What is the Benedict's test used for?

# Answer 18

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- To test for sugars

# Question 19

.... of 50

- Which test is used to test for protein?

# Answer 19

.... of 50

- The Biuret test

# Question 20

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- What are spiracles?



# Answer 20

.... of 50

- Tiny holes found on the side of an insect's body that open into small tubes (tracheae)

# Question 21

.... of 50

- Name three factors respiratory exchange surfaces have

# Answer 21

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- A large surface area
- A thin permeable membrane
- A moist exchange surface

# Question 22

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- Name two minerals fertilisers contain

# Answer 22

.... of 50

- Nitrates
- Phosphates
- Potassium
- Magnesium

# Question 23

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- Why do plants need water?

# Answer 23

.... of 50

- To maintain the shape of their cells and for photosynthesis

# Question 24

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- Give one adaptation of a root hair cell for efficient exchange surface for osmosis



# Answer 24

.... of 50

- Large surface area for absorption of water
- No cuticle, thin membrane to allow absorption
- Thin cell wall, to reduce osmosis distance
- Large permanent vacuole to absorb as much water as possible
- Close to the xylem, so materials can be moved around the plant

# Question 25

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- Give two uses of potassium in a plant

# Answer 25

.... of 50

- Respiration
- Photosynthesis
- To make enzymes

# Question 26

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- What would a plant lacking in nitrates display?

# Answer 26

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- Poor growth
- Yellow leaves

# Question 27

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- What are the two types of fertiliser?

# Answer 27

.... of 50

- Organic
- Inorganic

# Question 28

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- Describe a closed circulatory system and name the two types



# Answer 28

.... of 50

- Blood flows in vessels
- Single circulation
- Double circulation

# Question 29

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- Give three features of a vein

# Answer 29

.... of 50

- Carry blood to the heart
- Blood under low pressure
- Thinner walls, not permeable
- Large lumen
- Valves along their length prevent backflow of blood
- Carry deoxygenated blood

# Question 30

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- Give an advantage of the double circulation system

# Answer 30

.... of 50

- Blood pressure is higher, especially to the body
- There is higher blood flow to body tissues
- Oxygenated blood is separate from deoxygenated blood

# Question 31

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- What does a pacemaker do?

# Answer 31

.... of 50

- Controls the natural resting heart rate

# Question 32

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- What are the 4 main blood vessels?



# Answer 32

.... of 50

- Pulmonary vein
- Aorta
- Vena cava
- Pulmonary artery

# Question 33

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- How long does the complete cardiac cycle take?

# Answer 33

.... of 50

- 0.08 seconds

# Question 34

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- What colour is plasma?

# Answer 34

.... of 50

- Straw coloured

# Question 35

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- Give two examples of substances transported by blood

- Hormones
- Antibodies
- Nutrients e.g. glucose, amino acids, minerals and vitamins
- Waste substances, like carbon dioxide and urea

# Question 36

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- Describe red blood cells



# Answer 36

.... of 50

- They are tiny, biconcave disc shape, contain haemoglobin and have no nucleus

# Question 37

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- What does oxygen and haemoglobin combine to produce

# Answer 37

.... of 50

- Oxyhaemoglobin

# Question 38

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- Where does gaseous exchange occur?

# Answer 38

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- Alveoli

# Question 39

.... of 50

- Give the passage of air through the breathing system

# Answer 39

.... of 50

- Inhaled air
- Trachea
- Bronchus
- Bronchiole
- Alveoli

# Question 40

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- What is gas exchange?



# Answer 40

.... of 50

- Taking in oxygen
- Releasing carbon dioxide

# Question 41

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- Give one adaptation of alveoli for efficient gaseous exchange

# Answer 41

.... of 50

- Small spheres – large surface area
- Thin exchange surface – short diffusion distance
- Surrounded by blood capillaries – oxygen moved into blood and carbon dioxide is taken to the lungs
- Moist surfaces – gases dissolve to allow efficient diffusion

# Question 42

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- Approximately how many million alveoli are there in are lungs?

# Answer 42

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- Over 300 million

# Question 43

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- Describe coronary heart disease

# Answer 43

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- Fatty material build up inside the coronary arteries

# Question 44

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- Give two factors that contribute to coronary heart disease



# Answer 44

.... of 50

- Genetic factors
- Gender
- Age
- Diet
- Smoking

# Question 45

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- What do heart valves do?

# Answer 45

.... of 50

- Prevent the backflow of blood

# Question 46

.... of 50

- Give two symptoms of leaky valves

# Answer 46

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- Tiredness and lack of energy
- Breathlessness

# Question 47

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- Where is an artificial pacemaker fitted?

# Answer 47

.... of 50

- Under the skin
- A wire from a vein to the right atrium

# Question 48

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- Which drugs are used to reduce cholesterol levels?



# Answer 48

.... of 50

- Statins

# Question 49

.... of 50

- What do stents do?

# Answer 49

.... of 50

- Used to treat narrow coronary arteries

# Question 50

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- Give an advantage and disadvantage of a heart transplant

# Answer 50

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- Advantage – better quality of life
- Disadvantage – major surgery, need anti-rejection drugs and shortage of donors