

# B2 REVISION 4.1- CELL BIOLOGY

What do plant cells have that animal cells do not?

What is the function of:

Nucleus -

Mitochondria

Ribosomes

Chloroplasts

Cell Wall

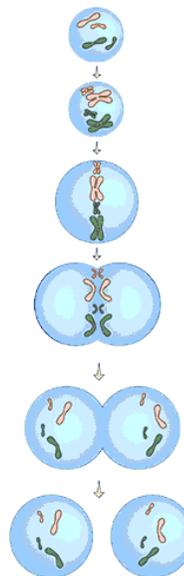
Draw and label a bacteria cell:

Define:

Eukaryotic:

Prokaryotic:

Draw **and** label a plant and an animal cell:



What is the name of this process?

How many daughter cells produced?

Are the genes identical or different to parental cell?

Why does this process take place?

## KEY WORDS:

Nucleus  
Cytoplasm  
Cell membrane  
Mitochondria  
Ribosome  
Chloroplast  
Vacuole

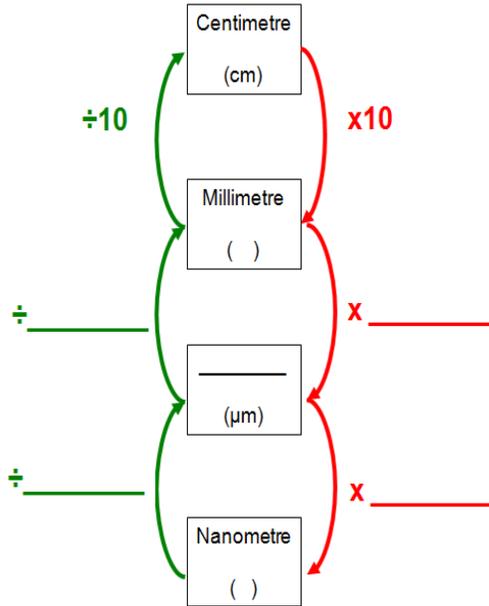
Specialised  
Diffusion  
Concentration  
gradient  
Multicellular  
Tissue  
Organ  
Organ system

## ASSESSMENT:



# B2 REVISION 4.1- CELL BIOLOGY, Magnification

Complete this flow chart:



How do you prepare an onion skin slide?

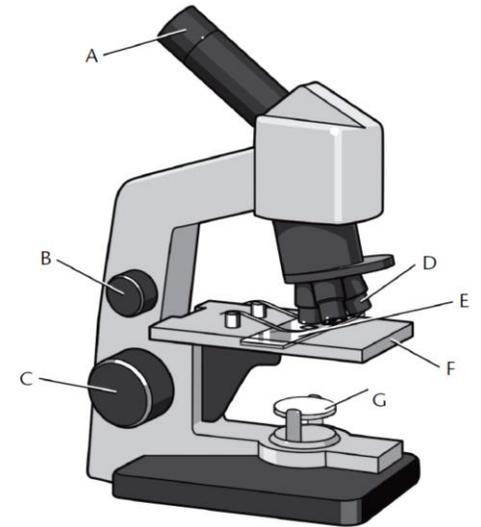
Write down the equation that links magnification, actual size of object and image size:

Write down two advantages and disadvantages of a light and electron microscope.

Light Microscope

Electron Microscope

- A:
- B:
- C:
- D:
- E:
- F:
- G:



KEY WORDS:

ASSESSMENT:



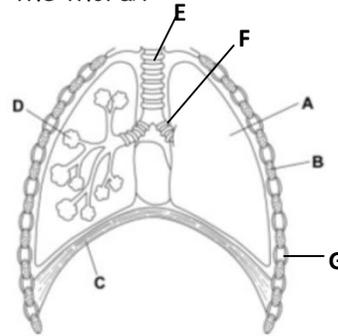
# B1 4.1 4.2- EXCHANGE OF MATERIALS

Describe active transport:

How is it different to diffusion:

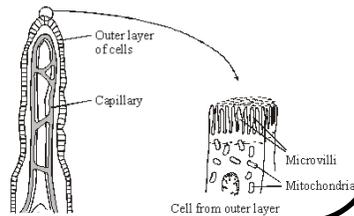
Label the structures of the thorax

- A:
- B:
- C:
- D:
- E:
- F:
- G:



Draw a picture to explain how osmosis works:

Describe the how nutrients are absorbed in the gut



Describe gas exchange in the lungs during inhalation:

Describe gas exchange in the lungs during exhalation:

Describe the effects of osmosis in animal cells:

Describe the effects of osmosis in plant cells:

Explain how gaseous exchange takes place in plants:

Describe transpiration:

## KEY WORDS:

Partially permeable	Capillaries	Vacuum
Osmosis	Breathing	Trachea
Active transport	Breathing systems	Villi
Solute	Thorax	Evaporation
Exchange surface	Abdomen	Cuticle
Ventilated	Diaphragm	Guard cells
Gaseous exchange	Intercostal muscle	Root hair cells
Alveoli	Negative pressure	Transpiration
	Positive pressure	Whitling

## ASSESSMENT:



# B1 4.2 - ENZYMES

What are enzymes made from?

What do enzymes do?

How do they work? (explain & draw the lock & key mechanism)

How can we speed up digestion?

Changing the pH:

Altering the surface area:

What are the 3 groups of enzymes in digestion? What is their substrate and what do they break them down into?

1)

2)

3)

What effect does temperature have on enzyme activity

What effect does pH have on enzyme activity

Why is the stomach acidic?

What is bile, what does it do and how does it do it?

## KEY WORDS:

Catalysts  
Enzyme  
Active site  
Denatured  
Digested  
Carbohydrase  
Amylase

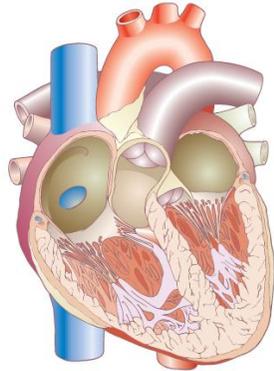
Protease  
Lipase  
Bile  
Emulsifiers  
Biological  
detergents

## ASSESSMENT:



# B1 4.2 TRANSPORTING MATERIALS

Label the structures of the heart



State the parts that make up blood:

What substances are transported by the blood:

Explain the function of:  
Red blood cells:

White blood cells:

Describe what artificial pacemaker is and what it's used for:

Describe what an artificial heart is and why it is used instead of a real heart:

What is the function of the valves?

Describe how the structure of each blood vessel are adapted to carry out its function:

Artery:

Vein:

Capillary

**KEY WORDS:**

Transport system	Oxygenated Arteries	Pulmonary artery	Urine
Blood circulation system	Veins	Aorta	Biconcave discs
Blood vessels	Coronary arteries	Valves	Pigment
Heart	Atria	Stents	Haemoglobin
Blood	Vena cava	Plasma	Oxyhaemoglobin
Double circulation	Pulmonary vein	Red blood cells	Transfusion
	Ventricles	White blood cells	Donors
		Plasma	Phloem
		Urea	Xylem

**ASSESSMENT:**



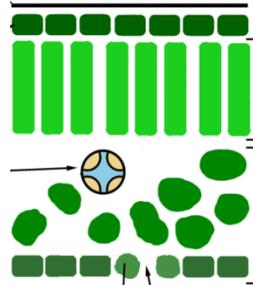
# B1 4.2 - Plant Organs and Systems

What is the equation for photosynthesis

Where in the plant does it occur?

How are leaves adapted to perform photosynthesis?

Label the different tissues in the leaf and explain their function:



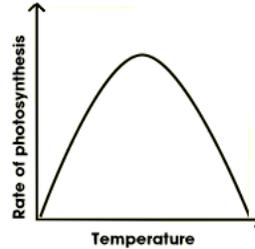
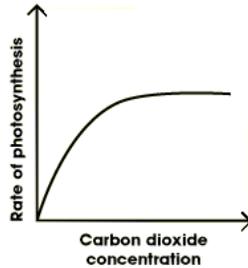
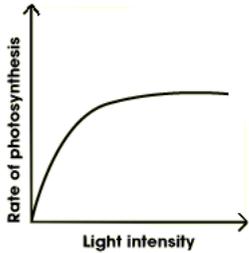
Explain how plants use glucose for the following:

Respiration

Building up molecules

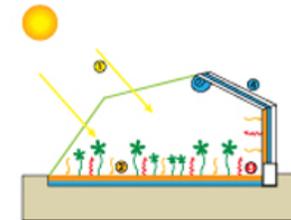
Storage

Explain how light,  $CO_2$  and temperature are limiting factors of photosynthesis



Why do farmers want their plants to do as much photosynthesis as possible?

Label the diagram below to explain which factors are being controlled? What is hydroponics?



# B1 4.3 Communicable Diseases

What are the two types of white blood cells and what are their functions:

List at least one disease, and its symptoms and treatments, caused by the following pathogens:

What are analgesics?

How do they work?

What are the differences between bacteria and viruses?

Bacteria:

Virus:

Fungus:

Protist:

What are antibiotics?

How do they work?

How do our bodies defend against disease?

## KEY WORDS:

Malnourished	Viruses
Metabolic rate	Bacteria
Overweight	Immune system
Obese	Antibiotics
Infectious disease	Epidemic
Microorganism	Pandemic
Pathogens	Immunisation
	Vaccination

## ASSESSMENT:



# B1 4.3 - MEDICINE & DRUGS

How do vaccines work?

What are drugs?

Why are some legal and others illegal?

What is the difference between prescribed and non-prescribed drugs?

What are the stages in developing a new drug?

What is a double-blind trial?

Describe the issues with thalidomide

What is a placebo?

Why are double blind trials used?

## KEY WORDS:

Effective	Depression
Safe	Withdrawal symptoms
Stable	Legal
Double-blind trial	Illegal
Placebo	Steroids
Thalidomide	
Statins	

## ASSESSMENT:

