

CB1 revision

How are osmosis and diffusion different?

Osmosis – just water, needs a partially permeable membrane

What transport can move larger molecules?

Active transport

Does potato in pure water lose or gain mass? Why?

Gain. Water moves in because water concentration inside potato is lower

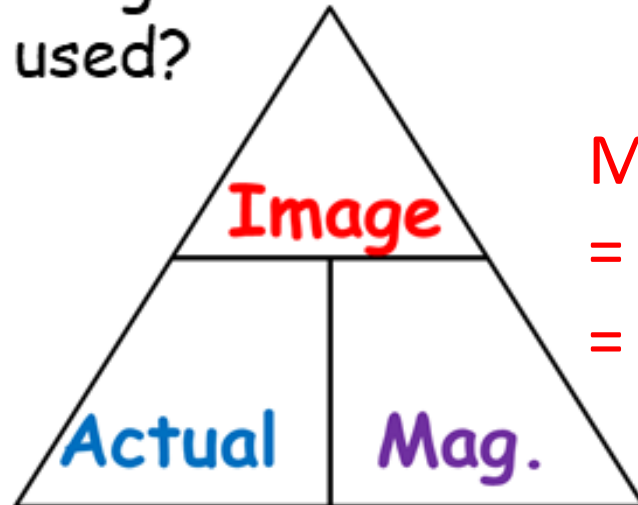
Does potato in high sucrose solution lose or gain mass? Why?

Lose. Water moves out because water concentration inside potato is higher

Define the following words:

Magnification	How much an image has been enlarged
Resolution	How clear an image is

Using the formula triangle- the size of an organism is 0.003mm and the size of the image is 4.2mm. What magnification was used?



$$\begin{aligned}\text{Mag} &= \text{image} \div \text{actual} \\ &= 4.2 \div 0.003 \\ &= \times 1400\end{aligned}$$

Complete the following:

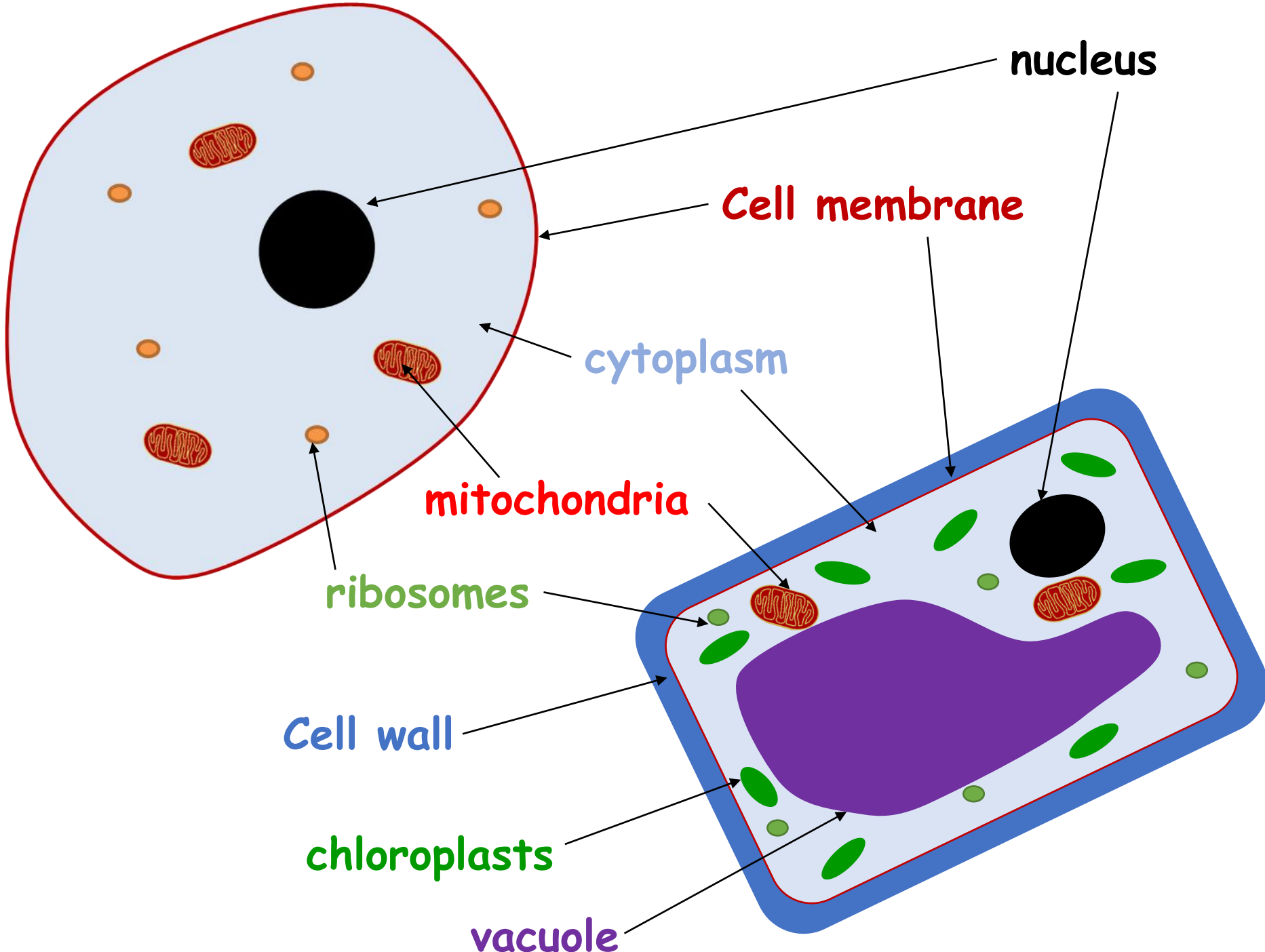
Total magnification= **Eyepiece** x **objective**

Eyepiece Magnification	Objective Magnification	Overall Magnification
X10	X4	X40
x15	x400	x6000

Describe three differences between a light microscope and an electron microscope:

Light – cheaper, smaller, uses light, lower magnification and resolution

.....
.....
.....



nucleus

Cell membrane

cytoplasm

mitochondria

ribosomes

Cell wall

chloroplasts

vacuole

Match up the following organelles to their functions:

Nucleus → Controls what happens in the cell and carries genetic information.

Cytoplasm → Controls what gets in and out of the cell.

Cell Membrane → Jelly like substance where chemical reactions happen.

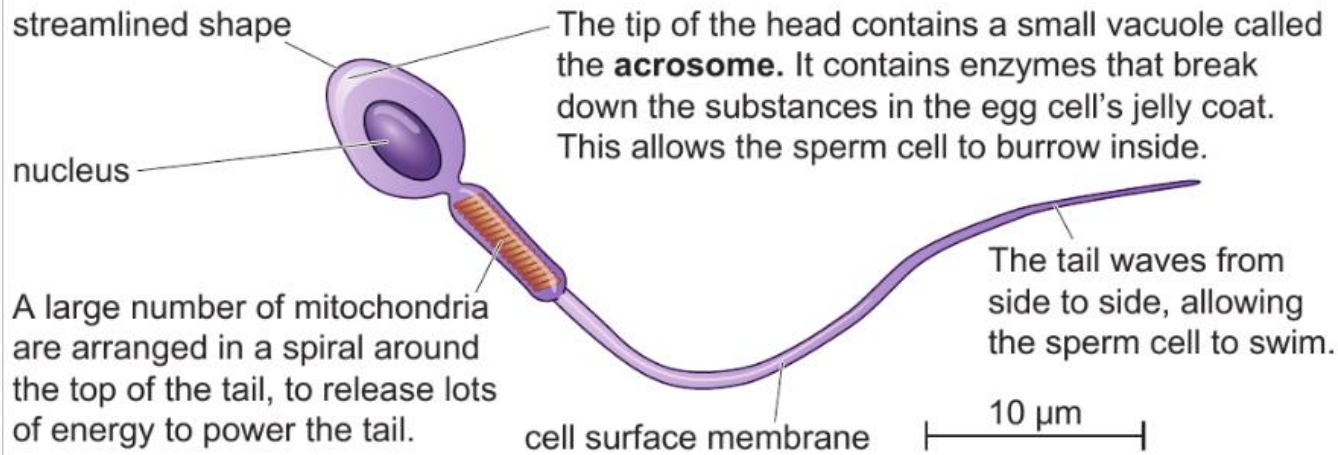
Ribosome → Where respiration occurs to make energy.

Mitochondria → Where new proteins are made.

Vacuole → Where the cell makes food through photosynthesis.

Chloroplast → Where cell sap is stored

Cell Wall → Gives the cell structure and support.



The cell membrane fuses with the sperm cell membrane. After fertilisation, the cell membrane becomes hard to stop other sperm cells entering.

The cytoplasm is packed with nutrients, to supply the fertilised egg cell with energy and raw materials for the growth and development of the embryo.

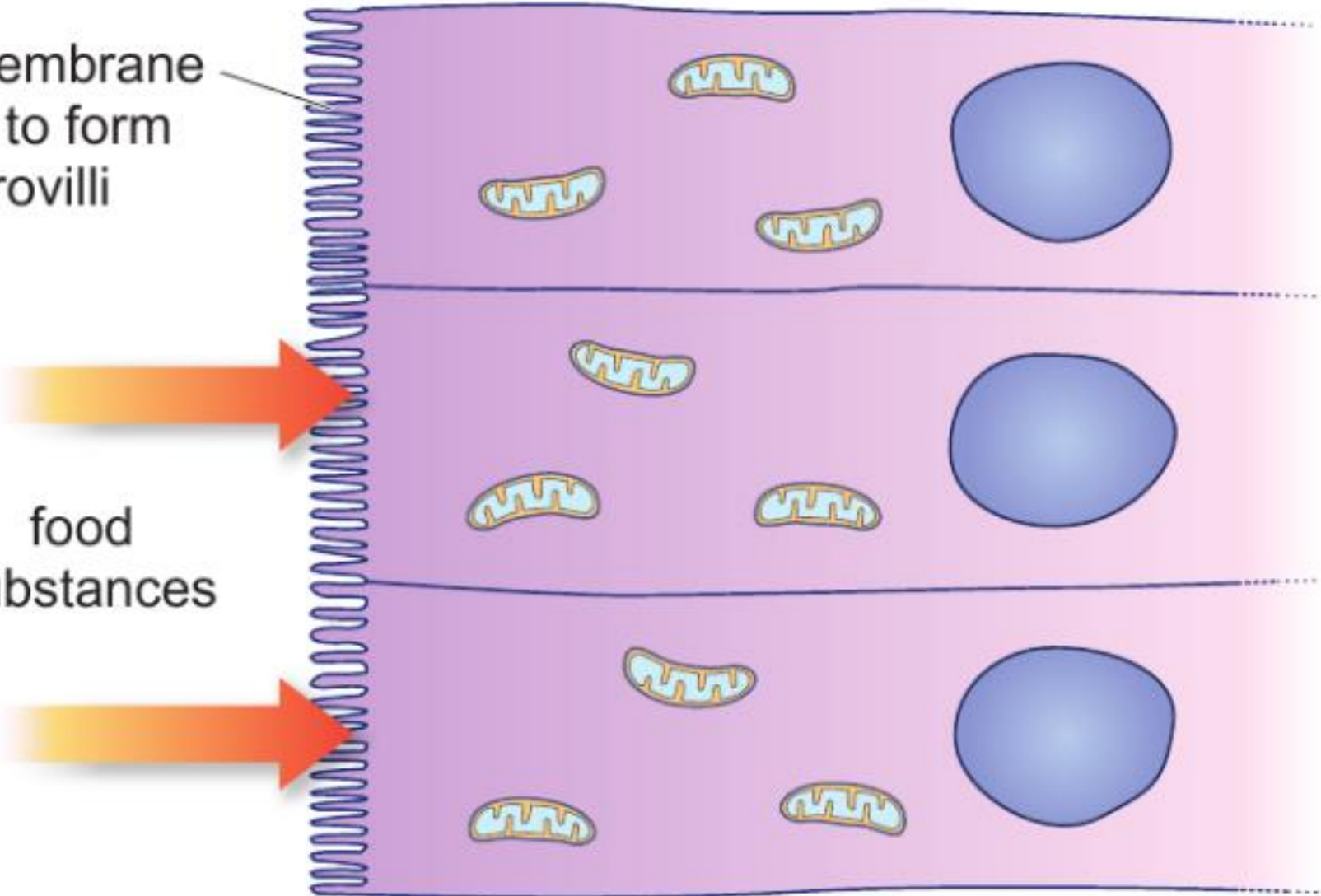


The jelly coat protects the egg cell. It also hardens after fertilisation, to ensure that only one sperm cell enters the egg cell.

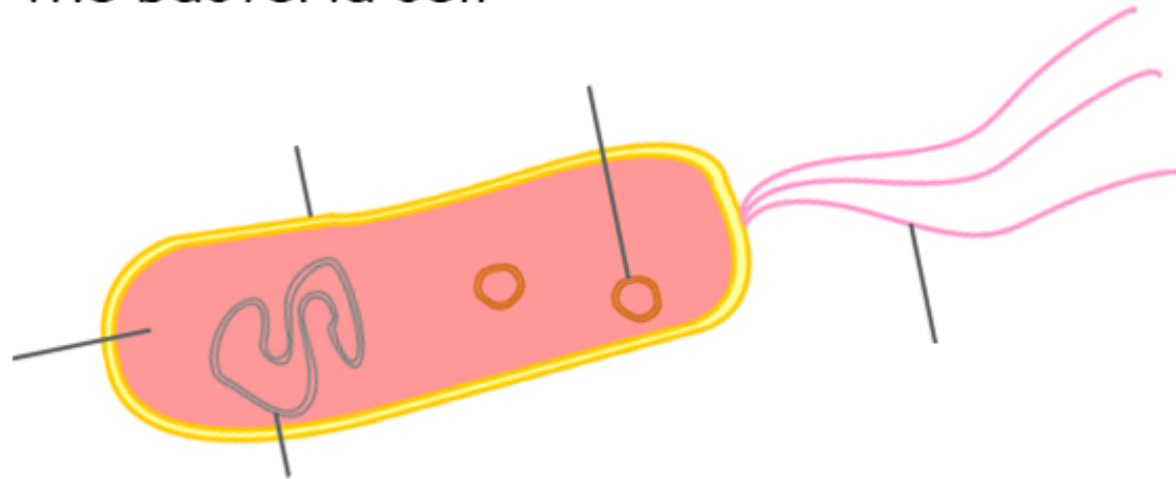
haploid nucleus

outer membrane
folded to form
microvilli

food
substances



Label the bacteria cell:



State the function of the following components:

Chromosomal DNA- Contains information cell

..needs to be reproduced.....

Plasmid DNA- "bonus" DNA for things like

..antibiotic resistance, can easily be exchanged.....

Flagella- moves cell.....

.....

Tick or cross which features are found in which types of cell:

Feature	Animal Cell	Plant Cell	Bacterial Cell
Cell Membrane	✓	✓	✓
Nucleus	✓	✓	✗
Plasmids	✗	✗	✓
Chloroplasts	✗	✓	✗
Cell Wall	✗	✓	✓
Cytoplasm	✓	✓	✓

Define the following words:

Eukaryotic	Cells with a nucleus
Prokaryotic	Cells without a nucleus

Explain what an enzyme is and what they do:

Biological catalyst – speeds up reactions.....

Digestion – breaks up big molecules.....

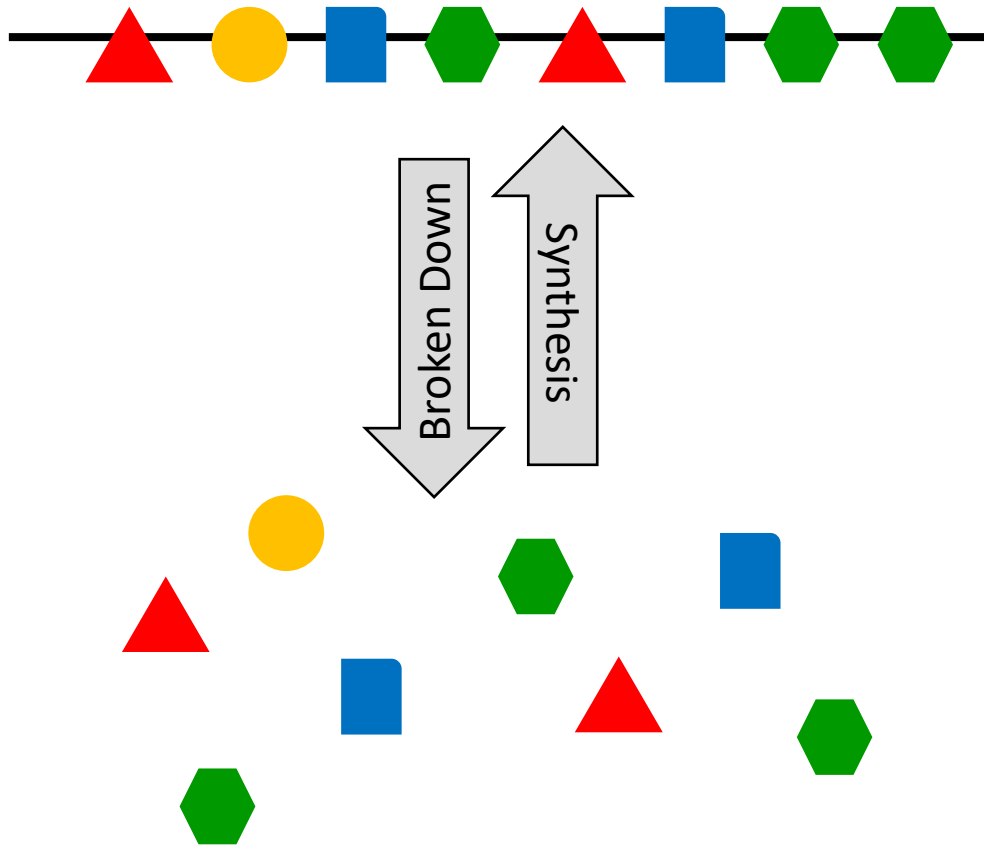
Synthesis – joins up small molecules.....

.....

Give some examples of enzymes in the body and what they do:

ENZYME	Where it is found?	What reaction is catalysed?
Protease	stomach	breaking up proteins

Draw a diagram and explain how proteins are broken down in the body- including what breaks them down and what they're broken in to:



A long chain of **amino acids** forming a **protein molecule**.

Individual **amino acids**.

What does denatured mean? What might cause an enzyme to denature?

Enzyme folds out of shape. Active site doesn't fit substrate → enzyme doesn't work.
pH or temperature

What does optimum temperature / pH mean? What happens beyond/below this?

Optimum = best.
Enzyme works fastest.
Outside enzyme is slow or denatured

Match up the following:

Substrate
concentration

temperature

pH

