

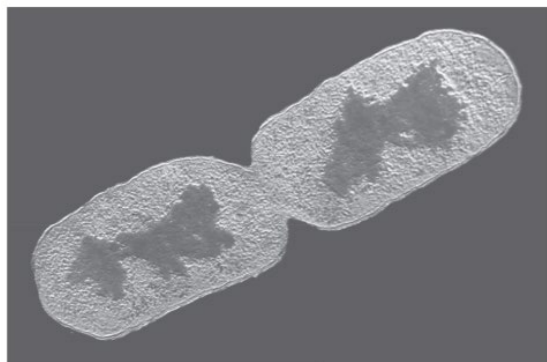
Name:

Class:



Bacteria are useful in biotechnology and genetic engineering.

The figure below shows a photomicrograph of a bacterium.



magnification $\times 27\,000$

- i. State the name of the process that is taking place in the figure.

Binary fission. Do not accept mitosis.

- ii. Write the formula that would be used to calculate the actual length of the bacterium.

Actual = Image size $\div$ magnification

- iii. Calculate the actual size of **one** of the bacteria from the image.

Give your answer to 3 sf.

$$35000 \div 27000 = 1.296$$

Accept any answer between 1.28 & 1.33 μm

1.30 μm

Where is follicle stimulating hormone produced and what is its effect?

Produced by: The pituitary gland

Effect: it causes the development of an ovum in an ovary.

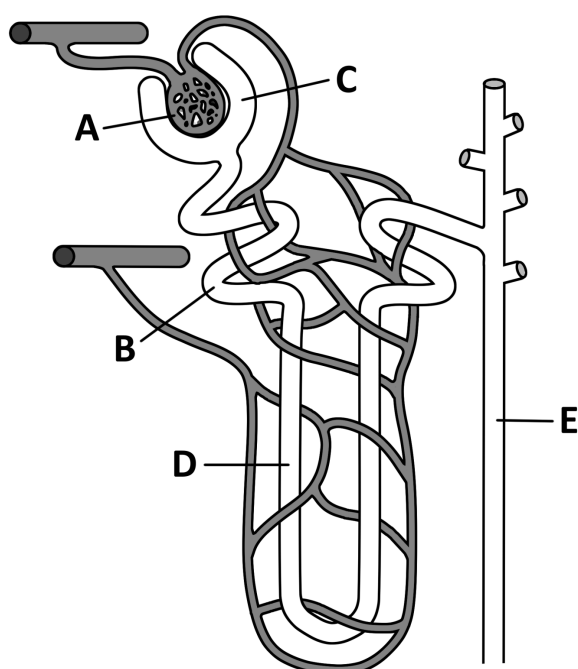
What is the substrate and products of the enzyme lipase?

Substrate: Lipids.

Product: 3 x fatty acids and 1 glycerol.

The figure below shows a kidney tubule and its associated blood vessels.

- i. Identify the structures labelled in the diagram.



A = **Glomerulus.**

B = **Proximal convoluted tubule.**

C = **Bowmans capsule.**

D = **Loop of Henle.**

E = **Collecting duct**

- ii. Describe the functions of the regions A and B.

The glomerulus is the site of ultra-filtration.

Where blood is filtered.

The PCT is the main region of reabsorption.

Many useful resources are reabsorbed here.