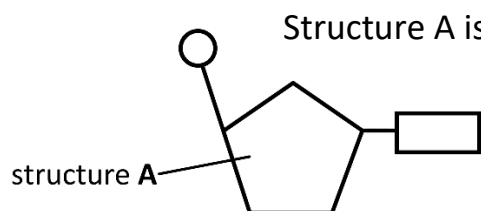


Name:

Class:



The figure below shows the structure of a DNA nucleotide.



Structure A is a: **A** Base

B Phosphate

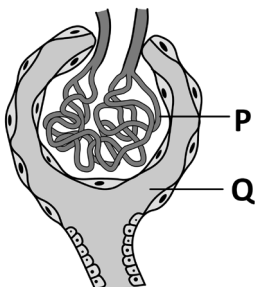
C Sugar

D Polymer

State what form of bond holds DNA strands together.

Hydrogen bond

The figure below shows part of a nephron.



i. What process occurs at P?

Ultra-filtration

ii. What effect does more ADH have on the collecting duct of the kidney?

More ADH makes the collecting duct more permeable.

This means more water is reabsorbed.

iii. Name the structures labelled P and Q.

P = **Glomerulus**

Q = **Bowmans capsule.**

Give the function of a ribosome.

Protein synthesis

State the function of a root hair cell.

Absorption of water and mineral ions

i. Name the enzyme used to join an insulin gene to bacterial plasmid.

DNA ligase or ligase enzymes

ii. Suggest why the same restriction enzyme is used to cut open a human chromosome and a bacterial plasmid. **Two from the following:**

- **Leaves single stranded ends /overhangs / sticky ends.**
- **Complementary / bases pair up.**
- **Hold gene in place while ligase joins the DNA / makes inserting gene into plasmid more successful.**

What is a gene?

A short section of DNA that codes for the production of a particular protein.

What is an allele?

A single copy or version of a gene.

The diagram shows some structures in a yeast cell.

Identify the structures labelled A and B.

A = **Cell wall**

B = **A mitochondrion. Accept mitochondria.**

