

2 The diagram below summarises the interconversion of ATP and ADP.



(a) Place a cross in the box that identifies each of the following.

(3)

(i) Substance **W**

- A** carbon dioxide
- B** an electron
- C** inorganic phosphate
- D** a proton

(ii) Reaction **S**

- A** carboxylation
- B** hydrolysis
- C** phosphorylation
- D** photolysis

(iii) Reaction **T**

- A** carboxylation
- B** hydrolysis
- C** phosphorylation
- D** photolysis

(b) Reaction **T** occurs in a chloroplast.

Describe the structures in a chloroplast that are involved in this reaction.

(3)

(c) The energy released by reaction **S** is used to form GALP (glyceraldehyde 3-phosphate) during the Calvin cycle. Plant cell walls contain cellulose molecules.

Suggest how GALP may be used to synthesise cellulose.

(5)

(Total for Question 2 = 11 marks)