

# 12.2 Respiration

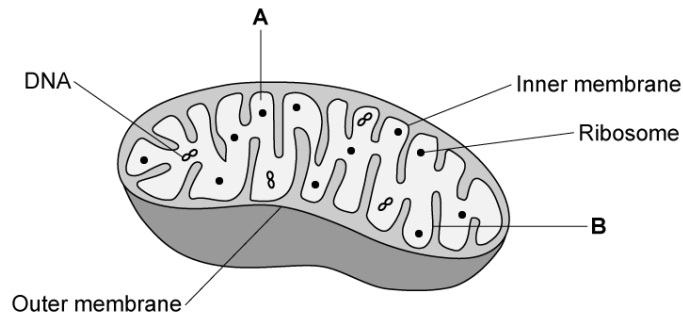
## Question Paper

Course	CIEA Level Biology
Section	12. Energy & Respiration
Topic	12.2 Respiration
Difficulty	Easy

**Time allowed:** 30  
**Score:** /23  
**Percentage:** /100

**Question 1a**

Fig. 1 shows a mitochondrion.



**Fig. 1**

Identify the parts labelled **A** and **B** on Fig. 1.

**[2 marks]**

**Question 1b**

**Table 1** provides information about the four stages of respiration and where they take place within cells.

**Table 1**

Stages of respiration	Location
Glycolysis	
Link Reaction	Mitochondrial matrix
	Mitochondrial matrix
	Inner membrane / cristae of the mitochondria

Complete **Table 1** by filling in the missing information.

**[3 marks]**

**Question 1c**

ATP production is facilitated by the enzyme ATP-synthase which is found attached to the inner membrane.

Use an appropriate chemical equation to represent the production of ATP.

[1 mark]

**Question 1d**

ATP is an energy source required for many reactions in the human body.

Identify **two** uses of ATP in the human body.

[2 marks]

**Question 2a**

State the balanced chemical equation for aerobic respiration.

[2 marks]

### Question 2b

Fig. 1 shows the process of glycolysis.

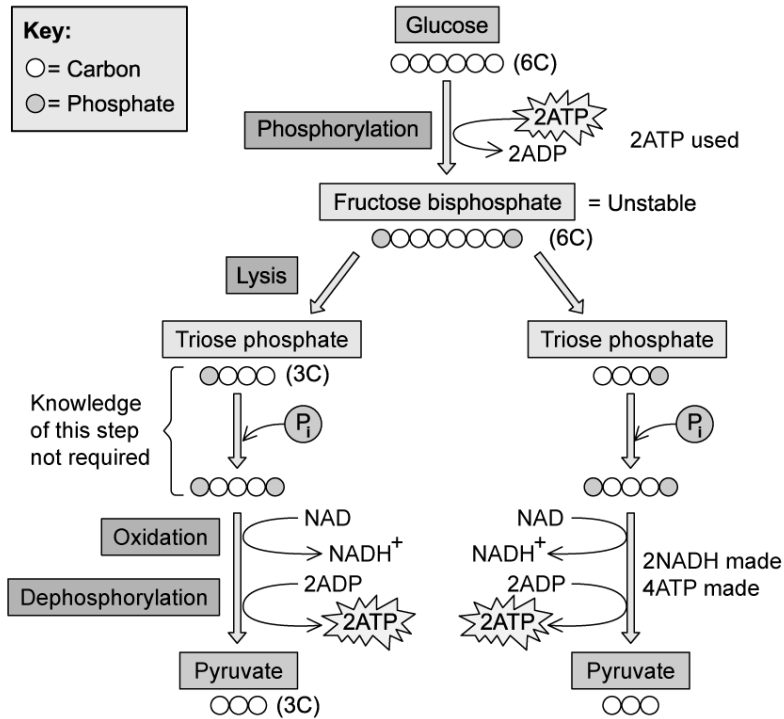


Fig. 1

Using Fig. 1, give the net ATP production from glycolysis.

[1 mark]

### Question 2c

Using Fig. 1, describe what happens during the process of phosphorylation.

[2 marks]

### Question 2d

During the final stage of glycolysis, triose phosphate (TP) is oxidised to form pyruvate.

Using Fig. 1, state what occurs during the oxidation of TP.

[2 marks]

**Question 3a**

Fig. 1 shows the process of ethanol fermentation.

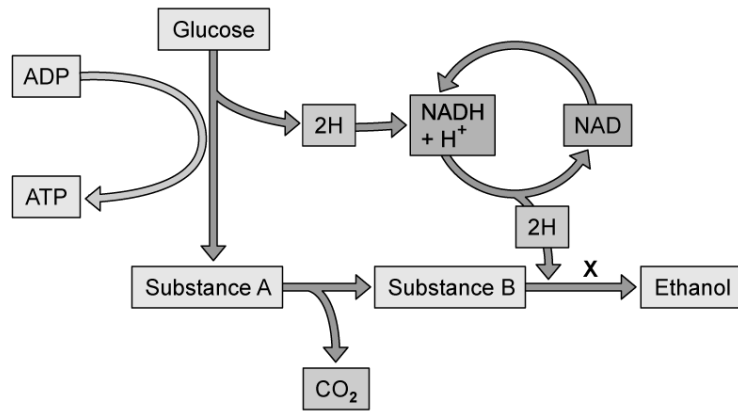


Fig. 1

Identify substances **A** and **B**.

[2 marks]

**Question 3b**

Identify the reaction that has occurred at point **X** in Fig. 1.

Explain your answer.

[2 marks]

**Question 3c**

Anaerobic respiration uses lactate fermentation which produces lactate as a waste product.

State **two** ways in which lactate could be metabolised in cells.

**[2 marks]**

**Question 3d**

In aerobic respiration, the presence of oxygen drives the electron transport chain to produce large amounts of ATP.

Describe the role of oxygen in the electron transport chain.

**[2 marks]**