

3.1.6 ATP Question

1.

(a) ATP is useful in many biological processes. Explain why.

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(4 marks)

(Extra space)
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1 (b) Write a simple equation to show how ATP is synthesised from ADP.

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(1 mark)

1 (c) Give **two** ways in which the properties of ATP make it a suitable source of energy in biological processes.

1.....
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2.....
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(2 marks)

Mark Scheme

Mark Scheme – General Certificate of Education (A-level) Biology – BIOL4 – January 2012

Question	Marking guidelines	Mark	Comments
8(a)	<ol style="list-style-type: none"> 1. Releases energy in small / manageable amounts; 2. (Broken down) in a one step / single bond broken; 3. Immediate energy compound/makes energy available rapidly; 4. Phosphorylates/adds phosphate; 5. Makes (phosphorylated substances) more reactive / lowers activation energy; 6. Reformed/made again; 	4 max	<ol style="list-style-type: none"> 1. Accept less than glucose 2. Accept easily broken down 4. Do not accept phosphorus or P on its own 6. Must relate to regeneration

1(b)	$ADP + P_i \longrightarrow ATP;$	1	<p>Both sides correct, but allow other recognised symbols or words for phosphate ion. Reject P unless in a circle.</p> <p>Accept = as equivalent to arrow</p> <p>Accept reversible arrow</p> <p>Ignore any reference to kJ/water</p>
1(c)	<ol style="list-style-type: none"> 1. Energy released in small/suitable amounts; 2. Soluble; 3. Involves a single/simple reaction; 	2 max	<ol style="list-style-type: none"> 1. In context of release, not storage. Ignore producing energy/manageable amounts. 2. Reject "broken down easily/readily" Reject "quickly/easily resynthesised"

