

AQA, OCR, Edexcel

A Level

A Level Biology

Carbohydrates Answers

Name:

M

M

E

Mathsmadeeasy.co.uk

Total Marks: /33

Carbohydrates

Answer	Marks
<p>1.</p> <p>a.</p> <p><u>Any three from:</u></p> <ul style="list-style-type: none"> -respiratory substrates - provides energy - stores energy - Glycoproteins/ receptors - builds macromolecules <p>b. Monosaccharide</p> <p>c. When two monomers become bonded together through the removal of a molecule of water</p> <p>i) Glycosidic bond</p> <p>ii)</p> <ul style="list-style-type: none"> - glucose -galactose -sucrose 	<p>3 marks</p> <p>1 mark</p> <p>1 mark</p> <p>1 mark</p> <p>3 marks</p>
<p>2.</p> <p>a)</p> <p>i) β - glucose (do not accept glucose)</p> <p>ii)</p> <div style="text-align: center;"> <p>The diagram shows a six-membered ring (pyranose) with an oxygen atom at the top vertex. The substituents are: C1 (down), C2 (up), C3 (up), C4 (down), C5 (up), and C6 (up).</p> </div>	<p>1 mark</p> <p>2 marks</p>

<p>iii) -β-glucose monomers arranged in straight chains. -Chains are joined together by hydrogen bonds. -Provides strength and structure.</p> <p>b) i) Stored as <u>glycogen</u> in the <u>liver/muscles</u></p> <p>c) i) <u>Any two from:</u> - both made of α-glucose monomers -both contain branched chains -insoluble, do not affect osmotic potential -Compact - maximum storage</p> <p>ii) - Amylose -Straight Chain polymer -Forms a helix for maximum compact storage</p> <p>-Amylopectin -Branched polymer -Maximum surface area for enzyme action</p>	<p>3 marks</p> <p>2 marks</p> <p>2 marks</p> <p>6 marks</p>
<p>3. a. Benedict's test</p> <p>b. -Sample must be in solution -Benedict's reagent is added -Test tube is heated in a water bath -Contents should turn (brick) red if a reducing sugar is present.</p>	<p>1 mark</p> <p>4 marks</p>

Visit <http://www.mathsmadeeasy.co.uk/> for more fantastic resources.

c. -Glucose, galactose, fructose, Lactose. Maltose (2 required)	2 marks
d. Sucrose	1 mark