

AQA, OCR, Edexcel

A Level

A Level Biology

The Nervous System 2 Answers

Name:

M

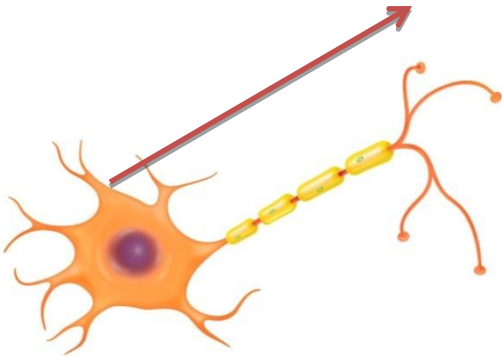
M

E

Mathsmadeeasy.co.uk

Total Marks: /31

The Nervous System 2

Answer	Marks
<p>1.</p> <p>a)</p> <p>i) A - Cell body B - Dendrites C - nucleus D - Axon E - myelin sheath</p>  <p>ii)</p> <ul style="list-style-type: none">-moves 3 sodium ions out for every two potassium ions it moves into the cell- by active transport- Potassium channel moves potassium ions out of the cell by facilitated diffusion- Outer membrane surface becomes more positive <p>iii) The membrane is impermeable</p>	<p>6 marks</p> <p>4 marks</p> <p>1 mark</p>

<p>b)</p> <p>i) – stimulation occurs</p> <ul style="list-style-type: none">- this causes depolarisation- Na^+ channels open and Na^+ diffuse into the cell- This reverses the charges across the membrane <p>ii) – Repolarisation occurs at +30mV; sodium channels close and potassium channels open and potassium diffuses out</p> <ul style="list-style-type: none">-Hyperpolarisation occurs as a result of too many potassium ions diffusing out of the cell – the potential becomes too negative- Sodium-potassium pump restores the membrane resting potential via active transport	<p>4 marks</p> <p>3 marks</p>
<p>2.</p> <p>A)</p> <p>i) Neurones are covered by a myelin sheath</p> <ul style="list-style-type: none">- This acts as an electrical conductor-Nodes of Ranvier are bare uncovered parts of the neurone- Action potentials jump between nodes <p>ii) –</p> <ul style="list-style-type: none">- Myelin speeds up transmission of impulses- Transmission is much slower as a result- May not occur	<p>4 marks</p> <p>2 marks</p>

<p>iii) - higher temperature will increase the speed of conductance. - The larger the diameter the faster the speed of conductance</p> <p>iv) Period where the sodium ion channels cannot open so there is no action potential - Absolute refractory period is where no action potentials can occur - Relative - Stronger the stimulus the shorter this is.</p> <p>3. - All action potentials are the same size -Regardless of the size of the stimulus</p>	<p>2 marks</p> <p>3 marks</p> <p>2 marks</p>
---	--