

Question			Answer	Marks	Guidance
1	(a)		cell signalling ;	1	<b>Mark the first answer.</b> If the answer is correct and an additional answer is given that is incorrect or contradicts the correct answer then = <b>0 marks</b>
1	(b)	(i)	synaptic (cleft / space / gap) ;	1	<b>Mark the first answer.</b> If the answer is correct and an additional answer is given that is incorrect or contradicts the correct answer then = <b>0 marks</b>  <b>ALLOW</b> synapse <b>DO NOT CREDIT</b> synoptic / synopsis / synapsis

Question			Answer	Marks	Guidance
1	(b)	(ii)	<p>1 (named) <b>neurotransmitter / acetylcholine</b> , released from <b>pre-synaptic</b> / first , cell / membrane ;</p> <p>2 <b>diffuses</b> across , gap / cleft / <b>synaptic cleft</b> <i>or</i> reaches second , neurone / cell / membrane , by <u>diffusion</u> ;</p> <p>3 attaches to , <b>receptors</b> / binding sites of sodium channels , on <b>post-synaptic membrane</b> / <u>membrane</u> of second cell ;</p> <p>4 neurotransmitter / acetylcholine , broken down (in cleft) ;</p>	2 max	<p><b>DO NOT CREDIT a mark point</b> if stated that complete <i>vesicles</i> (even if containing neurotransmitter) are involved</p> <p>1 <i>release of neurotransmitter</i> must be clearly stated</p> <p>2 <b>IGNORE</b> synapse</p> <p>3 <b>DO NOT CREDIT</b> post-synaptic knob / bulb</p> <p><i>Note that a statement reading:</i> <i>'Diffuses across and attaches to receptors on the post-synaptic membrane'</i> = <b>2 marks</b> (mps 2 &amp; 3)</p> <p>4 <b>CREDIT</b> ref to action of cholinesterase</p>
			<p><b>QWC</b> – technical terms used appropriately and spelt correctly ;</p>	1	<p>Use of <b>three</b> terms from: <b>neurotransmitter,</b> <b>acetylcholine,</b> <b>pre-synaptic / presynaptic,</b> <b>diffuse / diffusion,</b> <b>synaptic cleft,</b> <b>receptor,</b> <b>post-synaptic / postsynaptic</b></p> <p>Please insert a QWC symbol next to the pencil icon, followed by a tick (✓) if QWC has been awarded or a cross (×) if QWC has not been awarded</p> <p>You should use the green dot to identify the QWC terms that you are crediting.</p>

Question			Answer	Marks	Guidance
1	(b)	(iii)	<p>1 ensures movement of , impulse / action potential , in one direction (only) ;</p> <p>2 integration <b>or</b> one neurone can , connect to / receive impulses from / transmit impulses to , many neurones ;</p> <p>3 allows summation ;</p> <p>4 <i>idea</i> that filters out , 'background' / low level , stimuli <b>or</b> ensures that only stimulation that is strong enough will be passed on;</p> <p>5 AVP ;</p>	3 max	<p><b>IGNORE</b> ref to 'signals' / 'messages' / coordination</p> <p>1 <b>ACCEPT</b> description eg ACh only released from presynaptic <u>and</u> receptors only on postsynaptic</p> <p>3 <b>ACCEPT</b> description eg enough action potentials arrive to trigger depolarisation in next neurone</p> <p>5 eg <ul style="list-style-type: none"> <li>• permits , memory / learning</li> <li>• acclimatisation (or described)</li> <li>• prevents continuous stimulation of neurones</li> <li>• synapses are of two types – excitatory <u>and</u> inhibitory</li> </ul> </p>
1	(c)	(i)	<p>endotherm(s) ;</p>	1	<p><b>Mark the first answer.</b> If the answer is correct and an additional answer is given that is incorrect or contradicts the correct answer then = <b>0 marks</b></p> <p><b>CREDIT</b> homoiothermic</p>

Question			Answer	Marks	Guidance
1	(c)	(ii)	(vaso)dilation ;	1	<p><b>Mark the first answer.</b> If the answer is correct and an additional answer is given that is incorrect or contradicts the correct answer then = <b>0 marks</b></p> <p><b>IGNORE</b> 'arteriole'  <b>DO NOT CREDIT</b> 'arterial dilation'</p>
1	(d)	(i)	thyroxine / adrenaline;	1	<p><b>Mark the first answer.</b> If the answer is correct and an additional answer is given that is incorrect or contradicts the correct answer then = <b>0 marks</b></p> <p><b>ACCEPT</b> adrenalin / thyroxin / epinephrin(e)</p>
1	(d)	(ii)	hypothalamus ;	1	<p><b>Mark the first answer.</b> If the answer is correct and an additional answer is given that is incorrect or contradicts the correct answer then = <b>0 marks</b></p>
			<b>Total</b>	<b>12</b>	

Question		Expected Answer		Mark	Additional Guidance																
2	(a)		<table border="1"> <thead> <tr> <th><i>motor neurone</i></th> <th><i>sensory neurone</i></th> </tr> </thead> <tbody> <tr> <td>cell body in CNS</td> <td>cell body , not in CNS / in PNS</td> </tr> <tr> <td>cell body at end (of neurone)</td> <td>cell body , not at end / in middle (of neurone)</td> </tr> <tr> <td>dendrites connect directly to cell body</td> <td>dendrites do not connect directly to cell body <b>or</b> dendrites at the end(s) of , dendron / axon</td> </tr> <tr> <td>long(er) axon</td> <td>short(er) axon</td> </tr> <tr> <td>dendron absent / no dendron</td> <td>dendron present</td> </tr> <tr> <td>ends at motor end plate</td> <td>starts at / connects to , (sensory) receptor</td> </tr> </tbody> </table>	<i>motor neurone</i>	<i>sensory neurone</i>	cell body in CNS	cell body , not in CNS / in PNS	cell body at end (of neurone)	cell body , not at end / in middle (of neurone)	dendrites connect directly to cell body	dendrites do not connect directly to cell body <b>or</b> dendrites at the end(s) of , dendron / axon	long(er) axon	short(er) axon	dendron absent / no dendron	dendron present	ends at motor end plate	starts at / connects to , (sensory) receptor		<p><b>Award 1 mark for each correct side by side comparison.</b> Comparative statements <b>must</b> be made on the same row.</p> <p><b>ALLOW two valid comparisons in the same pair of boxes, e.g</b></p> <table border="1"> <tr> <td>Cell body at end of neurone in the CNS</td> <td>Cell body in middle and in the PNS</td> </tr> </table> <p><b>= 2 marks</b></p> <p>mps 2, 3 and 4 can be taken from a labelled diagram All mps can be taken from annotated diagrams</p>	Cell body at end of neurone in the CNS	Cell body in middle and in the PNS
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2	;																				
3	;																				
4	;																				
5	;																				
6	;																				

Question		Expected Answer	Mark	Additional Guidance
2	(b)	<p>1 - 60 to -70 ;</p> <p>2 depolarisation ;</p> <p>3 <u>threshold potential</u> / <u>threshold value</u> ;</p> <p>4 all or nothing ;</p> <p>5 size / magnitude ;</p> <p>6 <u>frequency</u> ;</p>	6	<p><b>Mark the first answer on each prompt line.</b> If the answer is correct and an additional answer is given that is incorrect or contradicts the correct answer then = <b>0 marks</b></p> <p><b>1 ACCEPT</b> any single figure or range (within this range) Must be a negative number</p> <p><b>4 ALLOW</b> all or none</p> <p><b>5 ALLOW</b> amplitude <b>DO NOT CREDIT</b> intensity / strength / value / potential difference / voltage</p>
<b>Total</b>			<b>9</b>	

Question			Expected Answers	Marks	Additional Guidance
3	(a)	(i)	<p>1 structure A / Schwann cell / it , produces <b>myelin</b> ;</p> <p>2 (electrical) <u>insulation</u> / <u>insulates</u> ;</p> <p>3 prevents movement of ions , into / out of , neurone / axon <b>or</b> prevents <b>depolarisation</b> ;</p> <p>4 speeds up , <b>conduction</b> / transmission / passage , of , <b>impulse</b> / action potential ;</p> <p>5 <b>action potentials</b> / <b>local circuits</b> / depolarisation / only occur at , gaps / <b>nodes</b> (of Ranvier) ;</p> <p>6 <b>saltatory</b> conduction / described ;</p>	3 max	<p>1 Needs the idea of production rather than simply stating 'it is a myelin sheath'</p> <p>2 <b>CREDIT</b> insulate or derived term. <b>IGNORE</b> impermeable <b>DO NOT CREDIT</b> <i>idea of</i> thermal insulation</p> <p>3 <b>CREDIT</b> 'across membrane' instead of , in / out, of axon <b>IGNORE</b> ion exchange <b>IGNORE</b> impermeable <b>DO NOT CREDIT</b> ions moving , into / out of , membrane <b>DO NOT CREDIT</b> movement of ions without qualification</p> <p>4 Statement must be comparative eg <u>faster</u> <b>DO NOT CREDIT</b> message / signal / wave of depolarisation</p> <p>5 <b>ACCEPT</b> longer local circuits <b>ACCEPT</b> 'local currents' instead of local circuits</p> <p>6 eg • impulse jumps from , node to node / gap to gap <b>Note:</b> 'saltatory conduction' = 2 QWC terms</p>
			<p><b>QWC</b> – technical terms used appropriately with correct spelling ;</p>		<p>1 Correct use and spelling of 3 terms from: <b>myelin,</b> <b>depolarisation (or other derived term),</b> <b>impulse,</b> <b>conduct (or other derived term),</b> <b>action potential,</b> <b>local circuit,</b> <b>node,</b> <b>saltatory</b></p> <p><b>You should use the GREEN DOT to identify the QWC terms that you are crediting.</b></p> <p><b>Please insert a QWC symbol next to the PENCIL ICON, followed by</b> a tick (✓) if QWC has been awarded or a cross (×) if QWC has not been awarded</p>

Question			Expected Answers	Marks	Additional Guidance
3	(a)	(ii)	<u>exocytosis</u> ;	1	<p><b>Mark the first answer.</b> If the answer is correct and an additional answer is given that is incorrect or contradicts the correct answer then = <b>0 marks</b></p> <p><b>IGNORE</b> bulk transport</p>
3	(a)	(iii)	<u>diffusion</u> ;	1	<p><b>Mark the first answer.</b> If the answer is correct and an additional answer is given that is incorrect or contradicts the correct answer then = <b>0 marks</b></p> <p><b>DO NOT CREDIT</b> facilitated diffusion</p>
3	(a)	(iv)	<p>1   <i>idea that only</i> the <u>presynaptic</u> neurone , produces / releases / contains , acetylcholine / ACh / (neuro)transmitter ;</p> <p>2   only the <u>presynaptic</u> membrane has , Ca<sup>(2+)</sup> / calcium (ion) , channels ;</p> <p>3   <i>idea that only</i> the <u>postsynaptic</u> , membrane / neurone , has (ACh) receptors ;</p> <p>4   ACh broken down at <u>postsynaptic</u> membrane ;</p>	1 max	<p><b>IGNORE</b> ref to refractory period (as not a feature of synapse)</p> <p><b>ACCEPT</b> ACH / ach throughout</p> <p>1   <b>CREDIT</b> knob / terminal bouton / bulb (instead of neurone)</p> <p>2  </p> <p>3   <b>DO NOT CREDIT</b> ref to bouton / bulb / etc</p> <p>4   <b>IGNORE</b> ref to (acetyl)cholinesterase without ref to action at postsynaptic membrane</p>



Question			Expected Answers	Marks	Additional Guidance
3	(b)	(i)	<p>1 <i>idea that</i> atropine , binds to / occupies / competes for , (ACh) <u>receptor</u> on postsynaptic , membrane / neurone ;</p> <p>2 <i>idea that</i> prevents ACh binding / blocks binding site / blocks receptor ;</p> <p>3 ion gates / ion channels / sodium channels / protein channels , do not open / remain closed ;</p> <p>4 Na<sup>+</sup> cannot enter / K<sup>+</sup> cannot leave , neurone / (nerve) cell ;</p> <p>5 no / insufficient , depolarisation / postsynaptic potential / excitatory postsynaptic potential / epsp / generator potential ;</p> <p>6 (so) does not reach threshold (value / potential) ;</p>	3 max	<p><b>IGNORE</b> ref to atropine and ACh having similar shapes (as given in Q)</p> <p><b>ACCEPT</b> ACH / ach throughout</p> <p><b>Only credit ORA for the mark points if candidate clearly states that these events do <u>NOT</u> take place with atropine.</b></p> <p>1 <b>IGNORE</b> ref inhibition <b>DO NOT CREDIT</b> active site <b>DO NOT CREDIT</b> ref to bouton / bulb / etc</p> <p>2</p> <p>3 <b>CREDIT</b> fewer ion channels open</p> <p>4 <b>CREDIT</b> sodium ions / potassium ions <b>DO NOT CREDIT</b> Na / K <b>DO NOT CREDIT</b> ions entering the membrane</p> <p>5 <b>IGNORE</b> action potential (as given in Q)</p> <p>6</p>

Question			Expected Answers	Marks	Additional Guidance
3	(b)	(ii)	<p><b>1</b> <i>idea that</i> will , bind to / occupy / compete for / block , (some of ACh) receptors ;</p> <p><b>2</b> so acetylcholine / ACh , cannot bind / less likely to bind (to receptor / to postsynaptic membrane) ;</p> <p><b>3</b> prevents / reduces , constant stimulation / overstimulation / constant depolarisation , of postsynaptic neurone  <b>or</b> prevents / reduces , constant firing of action potentials / tetanus / (muscle) spasm ;</p> <p><b>4</b> AVP ;</p>	2 max	<p><b>ACCEPT</b> ACH / ach throughout</p> <p><b>1</b> <b>DO NOT CREDIT</b> ref to active site</p> <p><b>2</b> <b>ACCEPT</b> <i>idea that</i> ACh remains in synaptic cleft</p> <p><b>3</b></p> <p><b>4</b> eg</p> <ul style="list-style-type: none"> <li>• effective if administered soon after exposure</li> <li>• cannot counteract inhibition of acetylcholinesterase</li> </ul>
			<b>TOTAL</b>	<b>12</b>	



Question			Expected Answer	Mark	Additional Guidance
4	(c)	(i)	<p>1 attacked by the body's (own) immune system ;</p> <p>2 (immune system) mistakes / treats / recognises , body cells / neurones / myelin , as , 'foreign' / non self ;</p> <p>3 correct ref. to , antibodies / (named) phagocytes / (named) B lymphocytes / (named) T lymphocytes ;</p>	2 max	1 Named parts of the immune system are credited in mp 3 – not in this mp
4	(c)	(ii)	<p>1 (damage to) myelin / sheath / Schwann cell(s) ;</p> <p>2 removes / has less , insulation ;</p> <p>3 interferes with / slows / stops , conduction of , (nerve) impulse / action potential <b>or</b> slows / stops / prevents , saltatory conduction / described ;</p> <p>4 occurs , in sensory neurones / towards brain / towards CNS / from sensory organ / from receptor ;</p>	2 max	<p>1 <b>IGNORE</b> damaged neurone (as given in Q) <b>IGNORE</b> damaged axon</p> <p>3 e.g. • more gaps where depolarisation needs to take place • shorter local , circuits / currents</p>
<b>Total</b>				<b>[10]</b>	

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5	(a)	1	myelin / myelinated / lipid / fatty (sheath) ;	2 max	1 <b>DO NOT CREDIT</b> fatty acids  3 must be in the context of structure rather than function (as many refer to it in context of saltatory conduction)																												
		2	(Schwann) <u>cell</u> , wrapped around / surrounds / AW, <u>axon</u> ;																														
		3	except at nodes of Ranvier / (sheath) not continuous / presence of gaps (in the sheath) ;																														
	(b) (i)	1	(myelination produces) <u>greater</u> speeds ;	2 max	1 <b>IGNORE</b> ref to axon diameter for this mp  3 1 speed for myelinated (25 / 30 / 35 , $\text{m s}^{-1}$ ) <b>and</b> 1 speed for unmyelinated (3 / 30 , $\text{m s}^{-1}$ ) (allow m/s) <b>or</b> calculated difference in speed between myelinated and unmyelinated ( <b>with units unless</b> a multiple e.g. approx. x12)																												
		2	unmyelinated needs larger diameter to produce same speed ;																														
		3	comparative figs, <b>all</b> with units, to support either the general trend or the exception to the trend with the mollusc ;																														
	(b) (ii)	1	larger axon diameter produces <u>greater</u> speeds ; <b>ora</b>	2 max	1 needs to be a general statement 2 2 diameters & speeds ( <b>both with units</b> ) for <b>myelinated</b> <b>or</b> calculated difference in diameter for 2 stated speeds ( <b>both with units unless</b> diameter is a multiple e.g. around x 1.4 / around 140%) <table border="1" data-bbox="1360 802 2060 953"> <thead> <tr> <th>type of neurone</th> <th>diameter (<math>\mu\text{m}</math>)</th> <th>speed (<math>\text{m s}^{-1}</math>)</th> <th>animal taxon</th> </tr> </thead> <tbody> <tr> <td>myelinated</td> <td></td> <td>25</td> <td>mammal</td> </tr> <tr> <td>myelinated</td> <td></td> <td>30</td> <td>amphibian</td> </tr> <tr> <td>myelinated</td> <td></td> <td>35</td> <td>amphibian</td> </tr> </tbody> </table> <b>or</b> 2 diameters & speeds ( <b>both with units</b> ) for <b>unmyelinated</b> <b>or</b> calculated difference in diameter for 2 stated speeds ( <b>both with units unless</b> diameter is a multiple e.g. about x10) <table border="1" data-bbox="1360 1188 2060 1293"> <thead> <tr> <th>type of neurone</th> <th>diameter (<math>\mu\text{m}</math>)</th> <th>speed (<math>\text{m s}^{-1}</math>)</th> <th>animal taxon</th> </tr> </thead> <tbody> <tr> <td>unmyelinated</td> <td>15</td> <td></td> <td>mammal</td> </tr> <tr> <td>unmyelinated</td> <td>1 000</td> <td></td> <td>mollusc</td> </tr> </tbody> </table>	type of neurone	diameter ( $\mu\text{m}$ )	speed ( $\text{m s}^{-1}$ )	animal taxon	myelinated		25	mammal	myelinated		30	amphibian	myelinated		35	amphibian	type of neurone	diameter ( $\mu\text{m}$ )	speed ( $\text{m s}^{-1}$ )	animal taxon	unmyelinated	15		mammal	unmyelinated	1 000		mollusc
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		2	comparative figs, <b>all</b> with units, to support ;																														

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(c)	(i)	1	<p>increased <u>kinetic energy</u> / <u>KE</u> so,</p> <ul style="list-style-type: none"> <li>ions <u>diffuse</u>, across (axon) membrane / into neurone / into cell / between nodes / along neurone, more quickly</li> </ul> <p><b>or</b></p> <ul style="list-style-type: none"> <li>faster movement of (neurotransmitter) vesicles / exocytosis (of neurotransmitter)</li> </ul> <p><b>or</b></p> <ul style="list-style-type: none"> <li>neurotransmitter diffuses more quickly across, synapse / synaptic cleft</li> </ul> <p><b>or</b></p> <ul style="list-style-type: none"> <li>neurotransmitter (ACh) broken down by enzyme (acetylcholinesterase) more quickly ;</li> </ul>	<b>S &amp; C</b>	description of ion movement must be correct (e.g. Na <sup>+</sup> in for depolarisation / Ca <sup>2+</sup> into presynaptic knob)
		2	<p>faster <u>diffusion</u> of ions leads to,</p> <ul style="list-style-type: none"> <li>faster depolarisation</li> </ul> <p><b>or</b></p> <ul style="list-style-type: none"> <li>shorter duration of action potential</li> </ul> <p><b>or</b></p> <ul style="list-style-type: none"> <li>shorter refractory period</li> </ul> <p><b>or</b></p> <ul style="list-style-type: none"> <li>faster repolarisation ;</li> </ul>		
(c)	(ii)	1	ion, channels / pumps, disrupted / denatured / no longer function ;	<b>1 max</b>	<b>DO NOT CREDIT</b> general denaturation of proteins / enzymes
		2	fluidity of, membrane / phospholipid / bilayer, disrupted ;		
		3	(named) synaptic enzymes denatured ;		

Question		Expected Answers	Marks	Additional Guidance
(d)		<p><b>1</b> calcium <b>channels</b> open ;</p> <p><b>2</b> <math>\text{Ca}^{2+}</math> / <math>\text{Ca}^{++}</math> / calcium ions , enter / diffuse into,</p> <p><b>3</b> acetylcholine / ACh / <b>neurotransmitter</b>, in <b>vesicle(s)</b> ;</p> <p><b>4</b> (synaptic) vesicles move towards <b>presynaptic</b> membrane ;</p> <p><b>5</b> vesicles fuse with membrane ;</p> <p><b>6</b> release acetylcholine, by <b>exocytosis</b> , into synaptic <b>cleft</b> ;</p>		<p><b>IGNORE</b> ref to influx of <math>\text{Na}^+</math> and events when action potential arrives at the synaptic knob – start when the <math>\text{Ca}^{2+}</math> channels open</p> <p><b>2 DO NOT CREDIT</b> 'calcium' alone <b>DO NOT CREDIT</b> <math>\text{Ca}^+</math> <b>DO NOT CREDIT</b> 'enter membrane' – must cross it</p> <p><b>4 CREDIT pre-synaptic</b></p> <p><b>5 DO NOT CREDIT</b> attach / bind / join</p> <p>'vesicles move and fuse with presynaptic membrane' = mps 4 &amp; 5 'vesicles move and fuse with membrane' = mp 5 only</p>
		<b>QWC</b> – technical terms used appropriately and spelt correctly ;	<b>1</b>	Use of <b>three</b> terms from: <b>channel(s), vesicle(s), neurotransmitter, presynaptic / pre-synaptic, exocytosis, cleft,</b>
<b>Total</b>			<b>12</b>	

Question		Answer	Marks	Guidance
6	(a)	<p>1 receptors ;</p> <p>2 intensity ;</p> <p>3 chemical ;</p> <p>4 potential / value ;</p> <p>5 impulse ;</p>	5	<p><b>Mark the first answer on each prompt line.</b> If the answer is correct and an additional answer is given that is incorrect or contradicts the correct answer then = <b>0 marks</b></p> <p><b>1 ACCEPT</b> receptor cells <b>DO NOT CREDIT</b> neurones / organs</p> <p><b>2 IGNORE</b> brightness <b>DO NOT CREDIT</b> frequency</p> <p><b>3 IGNORE</b> volatile / soluble</p> <p><b>4 ACCEPT</b> 'level' / '(needed) for depolarisation' <b>IGNORE</b> numerical value quoted / 'receptor' <b>DO NOT CREDIT</b> action potential</p> <p><b>5 ACCEPT</b> action potential <b>DO NOT CREDIT</b> message / signal / information / stimulus</p>



Question			Answer	Marks	Guidance
6	(b)	(i)	<p><i>the motor neurone - structure</i></p> <p>the cell body is at (one) end of the , neurone / cell</p> <p><b>or</b></p> <p>the cell body is in , brain / spinal cord / CNS</p> <p><b>or</b></p> <p>dendrites connected (directly) to cell body</p> <p><b>or</b></p> <p>long(er) axon</p> <p><b>or</b></p> <p>no dendron</p> <p><b>or</b></p> <p>axon , connects to / ends at , effector / motor end plate ;</p>	1	<p><b>Mark the first answer.</b> If the answer is correct and an additional answer is given that is incorrect or contradicts the correct answer then = <b>0 marks</b></p> <p><b>IGNORE</b> ref to cell size / myelin(ation)</p> <p><b>DO NOT CREDIT</b> at end of axon / nerve</p> <p><b>IGNORE</b> reference to dendrite length</p> <p><b>CREDIT ora for sensory</b></p> <p>i.e. cell body is at centre of cell</p> <p><b>or</b></p> <p>cell body is in PNS</p> <p><b>or</b></p> <p>dendrites at the end(s) of , axon / dendron</p> <p><b>or</b></p> <p>short(er) axon</p> <p><b>or</b></p> <p>dendron present</p> <p><b>or</b></p> <p>connects to / starts at , receptor</p>

Question			answer	Marks	Guidance
6	(b)	(ii)	<p><i>the motor neurone - function</i>  carries , impulse(s) / action potential(s) ,  from , brain / spinal cord / CNS / relay neurone  <b>or</b>  carries , impulse(s) / action potential(s) ,  to , effector / muscle / gland ;</p>	1	<p><b>Mark the first answer.</b> If the answer is correct and an additional answer is given that is incorrect or contradicts the correct answer then = <b>0 marks</b>  <b>IGNORE</b> refs to 'connects ...'</p> <p><b>DO NOT CREDIT</b> message / signal / information / stimulus</p> <p><b>DO NOT CREDIT</b> message / signal / information / stimulus</p> <p><b>CREDIT ora for sensory</b>  i.e. carries , impulse(s) / action potential(s) ,  to , brain / spinal cord / CNS / relay neurone  <b>or</b>  carries , impulse(s) / action potential(s) ,  from receptor</p>
			<b>Total</b>	<b>7</b>	