

Question Number	Answer	Mark
4 (a)	<p>It is a form of cell division that</p> <ol style="list-style-type: none"> <li>halves the chromosome number / eq ;</li> <li>so that at fertilisation the {full complement / eq} of chromosomes is restored / eq ;</li> <li>allows genetic variation (in gametes) / eq ;</li> <li>through independent assortment / eq ;</li> <li>through crossing over / eq ;</li> </ol>	max (3)

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4 (b)(i)	<table border="1"> <thead> <tr> <th>Statements</th> <th>A</th> <th>B</th> <th>C</th> <th>D</th> <th>E</th> <th>F</th> <th>G</th> </tr> </thead> <tbody> <tr> <td>Site containing acrosin</td> <td></td> <td></td> <td><input checked="" type="checkbox"/></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Site where acrosin works</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td><input checked="" type="checkbox"/></td> <td></td> </tr> <tr> <td>Site containing the haploid number of chromosomes</td> <td></td> <td><input checked="" type="checkbox"/></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Site containing mitochondria</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td><input checked="" type="checkbox"/></td> </tr> </tbody> </table> <p>;;;</p>	Statements	A	B	C	D	E	F	G	Site containing acrosin			<input checked="" type="checkbox"/>					Site where acrosin works						<input checked="" type="checkbox"/>		Site containing the haploid number of chromosomes		<input checked="" type="checkbox"/>						Site containing mitochondria							<input checked="" type="checkbox"/>	(4)
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4(b)(ii)	<ol style="list-style-type: none"> <li>idea of stimulus e.g. receptors, contact with {zona / eq} , presence of chemicals ;</li> <li>reference to acrosome swells ;</li> <li>reference to {vesicle / acrosome} fuses ;</li> <li>with (sperm) cell (surface) membrane ;</li> <li>exocytosis ;</li> </ol>	max (2)

Question Number	Answer	Mark
4(c)(i)	idea that as the activity of acrosin increases so does fertilisation rate e.g. positive correlation ;	(1)

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4 c)(ii)	no data on {zero acrosin activity /zero percentage fertilisation} / cannot accurately extrapolate back from the data ;	(1)