

Question Number	Answer	Mark
4 (a)	<p>It is a form of cell division that</p> <ol style="list-style-type: none"> 1. halves the chromosome number / eq ; 2. so that at fertilisation the {full complement / eq} of chromosomes is restored / eq ; 3. allows genetic variation (in gametes) / eq ; 4. through independent assortment / eq ; 5. through crossing over / eq ; 	max (3)

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4 (b)(i)	<table><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><tr><td>Site containing acrosin</td><td></td><td></td><td>☒</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>☒</td><td></td></tr><tr><td>Site containing the haploid number of chromosomes</td><td></td><td>☒</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>☒</td></tr></table> <p>;;;</p>	Statements	A	B	C	D	E	F	G	Site containing acrosin			☒					Site where acrosin works						☒		Site containing the haploid number of chromosomes		☒						Site containing mitochondria							☒	(4)
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4(b)(ii)	<ol style="list-style-type: none"> 1. idea of stimulus e.g. receptors, contact with {zona / eq} , presence of chemicals ; 2. reference to acrosome swells ; 3. reference to {vesicle / acrosome} fuses ; 4. with (sperm) cell (surface) membrane ; 5. exocytosis ; 	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)