

Question Number	Answer	Mark
5(a)	<ol style="list-style-type: none"> 1. halves the chromosome number / one of each pair in gamete / haploid cells ; 2. randomly assorts the chromosomes / genes ; 3. provides <u>genetic</u> variation ; 4. the diploid number is maintained (in the zygote) ; 	max (2)

Question Number	Answer	Mark
5(b)	<ol style="list-style-type: none"> 1. acrosome present ; 2. digestive enzymes / eq ; 3. breakdown jelly surrounding ovum / allow head to reach the ovum membrane ; 4. reference to genetic material passing through ovum membrane ; 	max (2)

Question Number	Answer	Mark
5(c)(i)	16 ;	(1)

Question Number	Answer	Mark
5(c)(ii)	the cells do not {grow / increase in volume} / no new cytoplasm is produced ;	(1)

Question Number	Answer	Mark
5(c)(iii)	<ol style="list-style-type: none"> 1. chromosomes {shorten / coil} / condenses / become visible ; 2. (each chromosome becomes visible) as two chromatids ; 3. nuclear membrane / envelope breaks down ; 4. centrioles position themselves at opposite end of the cell / eq ; 5. spindles formed from microtubules / between {poles / centrioles}/ eq ; 6. chromosomes on the equator / eq ; 7. {attached / eq} by <u>centromeres</u> ; 	<p style="text-align: right;">max (3)</p>